# the concept

### OF

# SPACE

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### in

# Indian PHILOSOPHY

## SWAMI MADHAVTIRTHA

A dream mountain does not occupy any space because it is not an object but a phase of an event. A mountain in the waking condition of any one observer is also not an object but a phase of an event, therefore, it does not occupy any fundamental space. For instance, if a waking man is transformed into a dream man, the mountain seen by him in the waking state loses its boundry for him. He cannot carry that mountain in his dream state. Both the waking state and the dream state are स्थान धर्म i. e. view points of an observer. This is recognised in the Indian philosophy and in the science of relativity. Space in the waking condition is private. This is explained with examples in this small book.

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# THE CONCEPT OF SPACE IN INDIAN PHILOSOPHY.

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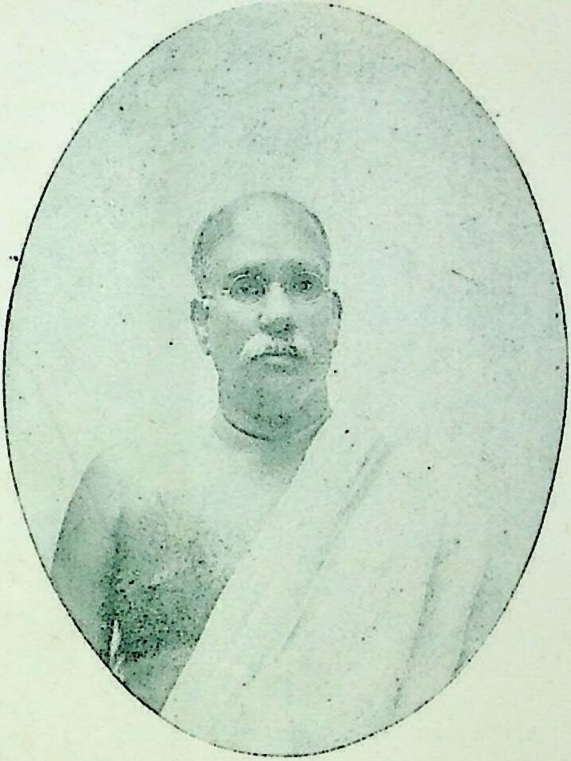

Shree Kovilakathu Narayan
Madhav Kartha
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father of G. Rudrani Amma
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(Lady Doctor, Dhrangadhra, Saurastra)

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# PREFACE

I am informed by a member of the Indian philosophical Congress that no one in India has so far written in English on the philosophical aspect of space. It is a difficult subject. It is better to attempt to solve a difficult problem than to neglect it altogether. This small book will give some positive philosophical and scientific knowledge of space or atleast it will make clear to the philosophical world the magnitude of the problem and will provide the thinkers with some materials by which further research on the subject can be made.

Every kind of our knowledge of the world involves a knower, a thing to be known and a space or relation or instrument of knowledge. Then we have to find out whether these three are absolute eternal facts and who has created the space between them. Every country has some kind of philosophy. Many people believe that whatever facts are realised by senses are true. In the Indian philosophy, it is said that whatever facts are not negated by subsequent experience are the only true facts. Philosophy of some kind moves the nations. Every country resounds with the tramp of armies, behind the armies are the political leaders, behind them are political creeds and behind creeds are the philosophers. India is now mainly guided by Mahatma Gandhi's philosophy in which workers' interest receives greater attention than the interest of thinkers. Before that, many students were guided by the British merchants' philosophy, before that we had a combination of Hindu and Muslim culture and before that the ancient culture of the Upnishads, when philosophers and thinkers got more respect than the workers.

The following was the dominant idea pervading the speeches made at the 26th Indian philosophical Congress held at Poona on 27-12-51:–

" The world is facing a crisis in human thought and sentiments as it stands on the brink of a conflagration which politicians are unable to prevent, and it is for philosophers to help preserve peace in the world by definining the ultimate goal and aim of human existence."

For this work, the Indian philosophers must be given special encouragement by the Indian State Government. The days of spinning-wheel-philosophy are over, as farmers are compelled to use engines for growing more food and Government is compelled to import and manufacture more machinery to meet the industrial needs of the people. The time has come for integral education, which will remove all spatial and temporal divisions. This cannot be done by a majority of votes, as, in all periods of human existence, the philosophers have remained in minority. Therefore, the rulers will have to keep philosophers as their advisers.

In this small book not only the concept of space in Indian philosophy is given but also the latest researches of the science of relativity are given with a view to see how far the two can meet. The latter helps us to understand the nature of Maya or measure and Indian philosophy helps us to remove the Maya. Both are necessary for integral or spiritual progress.

Several wise persons of the world consider that we should remove racial and national divisions, but unless we know how to remove all divisions, racial and national divisions cannot be removed. This is a very difficult procedure and very few men in the world are wise enough to remove all divisions. Before we try to remove divisions, we have to know how divisions are created. For this purpose, it is necessary to know how space is created between one man and another man and between any two things. Generally, people like the men of their own country, and they take measures by which their own country will be benefited. These measures create a division between one country and another country. Therefore, division is due to some kind of measure or Maya. This can be proved not only by Indian philosophy but by the latest development of physical science. This is explained from various points of view in this small book.

When voting takes place to elect political leaders, the leaders publish manifestos in which they declare that they will be able to remove all kinds of miseries or important miseries of the people but people are deceived in this way. The only way to remove all miseries is through a philosophical method of living. Philosophers see no distinction between one country and another country and between one race and another race. Their equality in wider than the equality of political leaders. Their life is wider, their world is wider and their space is also wider. Modern science also proves by mathematics that space is derivative and depends on the functions of an observer.

When we see two things, we must have certain knowledge of both, otherwise their truth cannot be maintained and the spatial divison between them cannot be maintained When we say that an individual is separate from God, we must have certain knowledge of God and the individual. If we see a distance between one man and another man in a dream, we must have certain knowledge of both otherwise the space between them cannot be maintained. It was formerly believed in science that even if all the material things disappeared out of the universe, time and space would be left. According to the theory of relativity and according to our dream experience, time and space together with the things of one state disappear in another state. The theory of relativity applies to the experiences of our waking condition and its results are identical with our dream experiences. Therefore, we should be careful in using our language in describing the events of the world. The Indian philosophy generally uses a negative language for worldly events i. e. अनिर्वचनीय i. e. worldly events are neither true nor false. The science of relativity uses a positive language when it days that if we can mention the system of reference, the events within that system can be positively described. But the quantum theory as discovered by Heisenberg (in 1927) says that there are no definite laws for sub-atomic particles

i. e. there are no laws which connect the position and momentum of a particle at one instant of time with the values of these quantities at a further instant. If the initial position and momentum of a particle of very small mass ( a subatomic particle ) are known within a certain margin, the position at a further instant can be computed within a certain margin. The new science has discovered that an electron does not have colour at any time and it is beginning to realise that it does not have other attributes like position, momentum, energy, corpuscularity, &c at all times.

All these new discoveries bring us to relative experiences of waking state, dream state and of sound sleep which are described in the Mandukya Upnishad of the Indian philosophy. There, we are advised that we can reach the absolute truth easily by a negative method i. e. by negating the experiences of waking, dream and sound sleep. But the new science gives us a positive language in describing the events of the waking condition. Therefore, the new science is more useful for understanding Maya or theory of measures and the Indian philosophy is more useful for showing us the ways to realise the Absolute truth. But the language used by both should be properly understod i. e. the negative language of the Indian philosophy and the relational language of the theory of Relativity. Our ordinary language of practical affairs is insufficient either for understanding the absolute truth or for understanding the world or Maya. Therefore, there is always a difficulty to spread the supreme truth amongst the masses of the people. They only understand if truth can be placed in the ordinary language and this is not possible There is no alternative but to learn the language of the method necessary for realising the supreme truth.

In comparing our waking experiences with our dream experiences, we can get a positive language but if any one doubts that waking experiences are not similar to dream experiences, then there are two following alternatives:–

(1) Either the man must try to understand the negative language of the Vedant philosophy.

(2) or he must try to understand the new relational language of the theory of Relativity, which uses a positive language but includes the whole system of reference i. e. he must learn the laws of a system and not merely the laws of the objects.

The value of the application of the doctrine of relativity is incalculable. Many errors in a man's life are due to unconscious variations in thought positions.

Once a married young girl was going from Ahmedabad to Bombay by train. Her mother had come to the station to see off the daugher. The daughter did not like to separate from the mother. The mother said to the daughter that the latter should consider the former as living in Bombay. In this way, space between them was negated.

Each man frames and adopts a constitution of his personal life according to his past and present observations. Every government also frames and adopts a constitution according to past and present observations. The main purpose of philosophy is to find out whether there are any mistakes in their observations. When some one asked Shri Raman Maharshi as to what will happen to the world in future, Maharshi replied that " you do not know even the present state of the world correctly, then why talk about the future ! "

Within the realm of division, we never find the Real but only an aspect of it. The Real is prior to this division into related and opposed complimentaries, which division is all that is meant by creation. Creation means more and more disintegation and spiritual state means complete integration. If an observer sees more divisions, he will see a greater creation, and he will not know when the end will come. If an observer sees no divisions, there will be no creation for him. It is something like waking from a dream.

The term event or karma has two fundamental meanings. In its private aspect it is an act of experience; in its physical aspect, it is identical with a region of space–time and so is a fact. In view of this distinction of meaning, there must be a revision of the definition of change, as displacement out of existence of one event or karma by another. As an act of expeerience, a past event would be non–existent but as a fact, as a physical event, it continues to be real. One might still cling to the conception of "replacement out of existence" by identifying existence with actuality without making it exhaustive of reality. This would mean that change is transmission of actuality from one event (in the sense of physics) to another in the field of space–time. But transmission is an act and would consist of events and would require a time over and above the time which is incorporated in the physical medium of events. Change is, therefore, a matter of the relativity of actuality to an observer. Once the experience of actuality in various degrees is admitted, it becomes clear that the status of actuality or potentiality of a perceived region depends not so much on the region (or space) itself as the mode of the peceipient's reaction to it. As in dream, so in the waking condition.

The size of an event is a relative property, varying with the distance from which each is determined. One and the same event has many dates and many sizes. This is proved in the Yoga Vasistha in the stories of Lila, Gadhi and Lavan. There, many dates are given for one and the same event. A past has no finality of being absolutely past. Philosophers have the power of discovering significant features of reality. They are the only people of imagination who are capable of introducing a great variety of perspective conditions. The laws of physical time and space are no longer inviolable. Therefore death has no meaning for them. Each event has its own local time which may be chosen as the present for reference with just as much right as any other. An event may play the part of an act or fact in turn, depending on whether the physical world is described in terms of its local system of co-ordinates ( दृष्टि-सृष्टिवाद ) or in terms of some other system ( सृष्टि-दृष्टिवाद ).

Brahma ब्रह्मा the creater is bound by his own time-space system and will not treat this world as false, a dreamer is bound by his system of time–space and will not consider it as false, similarly a man in the waking state is bound by his time–space system and will not consider it as false, yet, it is a fact that one system or state does not continue in another.

Each state fails to exhibit the reality of time–space. Space–time is the entity which ties the perspectives to–gether. Chronological precedence is a description referring to the category "relation" ( दृष्टि–सृष्टि ). Ignorant persons are trying to resolve "relation" ( दृष्टि–सृष्टि ) into a thing ( सृष्टि–दृष्टि ) but it must be remembered that a thing cannot serve as a connective category for the category event". Event is made out of space–time which is finite though unbounded; therefore मोक्ष ( i. e. liberation from a system or state is possible and can be secured by sound philosophical observation.

This small book will help the reader to correct his present observations so that he may be able to build for himself a permanent good constitution, not like the political constitutions and social constitutions which require constant changes according to imperfect observations.

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( Ahmedabad–
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15–1–52.

**Swami Madhavtirtha.**

# ERRATA.

| Age | Line | Incorrect | Correct |
|---|---|---|---|
| 9 | 14 | to the | the |
| 16 | 21 | observor | observer |
| 32 | 15 | Succed | Succeed |
| 39 | 4 | forees | forces |
| 44 | 16 | spaee | space |
| 85 | 25 | necessarity | necessarily |
| 97 | 18 | occupying it | occupying |
| 104 | 12 | withing | within |

# CHAPTER 1

## Introductory.

Who has created the space between two persons and who has created the space between two objects? These questions have been taken for consideration in this small book.

In the first place, the questions presuppose that space has been created by some one in the same way as the world is created. This requires some positive period of time. Unless we know how events are created, we cannot know how space is created. Therefore, we should take into consideration what the ancient Indian philosophy has to say thereon and what the modern Indian philosophy has to say. Also, our individual experiences of time and space in the dream condition may help us to solve the nature of our concepts about time and space in the waking condition. We should also take into consideration the latest discoveries of the science of relativity.

About space देश परिच्छेद it has been stated in some of the Indian philosophical works as follows:-

अत्यन्ताभाव प्रति योगित्वम् देशपरिच्छेदकत्वं i. e. that which is opposite to absolute non-entity creates the division of space, for instance, the nature or quality of an earthen jar घटत्व does not exist in any form in a piece of cloth पट. This quality creates a division of space between the earthen pot घट and the piece of cloth पट. Such divisions exist in material or unspiritual substances अनात्मा, they have no self-existence, therefore, the space between them has also no self-existence. The space does not say that I am the space and the two objects also do not say that they are here or there. There must be some-body to observe these objects and there must be someone to know the space that is lying between two objects. Then we shall have to consider the nature of the observer and his instrument of observation.

If we take the pure absolute spirit ब्रह्म into consideration, it is eternally complete and does not admit any spatial or temporal divisions. A question has been raised by a disciple in the Mundak Upnishad as follows :-

कस्मिन्नु भगवो विज्ञाते सर्वमिदं विज्ञातं भवति ।

By the knowledge of what principal element, can we know everything in the world ?

In reply, the master (गुरु) says that by knowing the one absolute Brahman ( अक्षर ) everything is known. Here, the master gives the following three examples :–

1. यथोर्णनाभिः सृजते गृह्णते च
2. यथा पृथिव्यामौषधयः संभवन्ति
3. यथा सतः पुरुषात्केशलोमानि

which means,—

1. Just as a spider creates a web out of himself and then dissolves it in himself;
2. Just as many trees spring out of the earth, without creating any separation.
3. Just as hairs come out of a man's body, so everything has come out of the one absolute (अक्षर).

In the first example, there is some kind of spatial division between the spider and the web, yet it helps us to realise some kind of unity. In the second example of trees, there is internal spatial division between the leaves and branches of the trees. It is called स्वगतभेद, yet it helps us to realise some kind of unity. In the third example of hairs coming out of a man's body, although there is a spatial division between the different hairs, when we look from outside, there is no spatial division, if we look from inside i. e. a man does not feel at any moment that the hairs are separate from him. In the same way everything has come out of one spiritual substance and no division of space will be felt, if we are one with that eternal spirit, for the realisation of which various methods have been given in the different Upanishads.

Our question is not whether we can find any divisions in the one absolute spiritual substance. Our question is why does a man see divisions of space between one man and another man? This is better explained in the Brihadaranyaka Upnishad in the dialogue between Yagnavalkya and Maitreyi (2-4) where the former teaches the latter (his wife) that आत्मा वा अरे द्रष्टव्यः श्रोतव्यो मन्तव्यो निदिध्यासितव्यो मैत्रेय्यात्मनो वा अरे दर्शनेन श्रवणेन मत्या विज्ञानेनेदꣳ सर्वं विदितम् (2-4-5) i. e., the absolute spirit only deserves to be seen, to be heard, to be thought of and to be meditated. By seeing, hearing, thinking and realising only this one, everything else is known.

But as the absolute spirit is not subject to sensual vision or sensual hearing nor comes within the grasp of mental thinking, this injunction means that one should not see, hear nor think of any unspiritual substance, and then the spiritual substance will shine by itself.

But how do we get the experience of any unspiritual substance if everything is spirit and only spirit. Who has created the spatial divisions in the one absolute spirit ? Although this question has not been raised by Maitreyi, ( the wife of Yagnavalkya ), he has anticipated the question and begins to explain the nature of spatial divisions as follows :–

1. ब्रह्म तं परादाद्योऽन्यत्रात्मनो ब्रह्म वेद
2. क्षत्रं तं परादाद्योऽन्यत्रात्मनः क्षत्रं वेद
3. लोकास्तं परादुर्योँऽन्यत्रात्मनो लोकान्वेद
4. देवास्तं परादुर्योँऽन्यत्रात्मनो देवान्वेद
5. भूतानि तं परादुर्योँऽन्यत्रात्मनो भूतानि वेद
6. सर्वँ तं परादाद्योऽन्यत्रात्मनः सर्वँ वेद
7. इदं ब्रह्मेदं क्षत्रमिमे लोका इमे देवा इमानि भूतानीद ꣳ सर्वँ यदयमात्मा । i. e,

1. Whoever sees the Brahman caste as separate from him, the men of that caste will consider that observer as separate from them.
2. Whoever will see the Warrior Caste as separate from him, the men of that caste will consider that observer as separate from them.
3. Whoever will see the inhabitants of different worlds as separate from him, those people will consider that observer as separate from them.
4. Whoever will see the Gods as separate from him, the Gods will consider that observer as separate from them.

5. Whoever will see the five material elements as separate from him, the spirits in those elements will consider that observer as separate from them.

6. This condition applies to all. If any one sees anything separate from him, the spirit in that substance will consider that observer as separate from it.

7. In truth, whatever is seen as इदम् i. e. separate as the Brahmin caste or the warrior caste or the inhabitants of different worlds or the Gods or the five elements आकाश, वायु, तेज, जल, पृथिवी is nothing but one spiritual substance.

The above unity is explained by means of a very good example. If we put a solid piece of salt in salt water, it merges in the water and itself becomes water; similarly, when an individual soul sees no differences, he merges in the one absolute Brahman.

Here is a very definite statement as to how space is created i. e. it is due to erroneous vision (अज्ञान). This principle also agrees with the discovery of relativity. Einstein also says that the structure of space is not determined until the functions of the co-ordinantes (प्रमाता, प्रमाण, प्रमेय)

are known. Prof. Milne says that the radius (space) between two points is proportional to the velocity of the observer. It is said in the Bhagwat (11–24–20) that this world will last as long as the God in the individuals will see it in the above manner- The fundamental tenet of the Vedant school consists not in denying the matter but in correcting the popular notion of it and in contending that it has no essence independent of mental perception, that existence and perceptibility are convertible terms.

Why does a man see differences? A further reply is given below by Yagnavalkya to his wife Maitreyi:–

यत्र हि द्वैतमिव भवति तदितर इतरं जिघ्रति &c. When any one feels as if he is separate from a thing to be smelt, he begins to smell, when he feels himself as if separate from a thing to be heard, he begins to hear something, when he begins to feel himself as a separate knower, he begins to know something; but when he becomes one with the one spirit of all, he will not be able to smell anything or hear anything or know anything.

This means that spatial separation is created by the following two causes:–

1. By considering oneself as living at one place (स्थान धर्म) through ignorance instead of being one with the absolute spirit (ब्रह्म) which exists everywhere.
2. By identification with the nature of the mind and the senses.

In the next chapter, we shall consider the nature of the evidence of the senses.

# CHAPTER 2

## Evidence of the senses.

The spatial characters of position, direction and distance can be perceived directly through vision and touch. This is the view of Nyaya, Vaiseshika and the Mimamskas. The Sankhya and the Patanjala hold that space and time are the categories of the understanding or the constructions of the intellect ( बुद्धि निर्माण ), according to which it understands the phenomenal world. It is the understanding which imports the empirical relations of space, time, and causality into the world. Therefore, we must try to overstand to the world by intuition and not try to understand the world ( which is equal to mind–stuff ). According to the Buddhist idealists, also, space and time are ideal constructions of the mind.

Space is sometimes distinguished as desh ( locus ) and dik ( direction ). Dik is connected with sound and ear.

According to Mimansaka, both locus ( देश ) and direction ( दिक् ) are perceived through the auditory organ, though they are percieved as qualifying adjuncts ( विशेषण ) of sounds. The Mimansaka holds that the ear–drum or the auditory organ produces the perception of sound, only when it actually comes in contact with the sound. The ear does not go out to the object. We perceive a sound only when the sound is carried to the ear-drum through the air waves. But can there be a direct perception of the locus (locality) of the sound through the ear drum? We find that in our actual experience the sound is never perceived without some local colouring; it is never perceived as having its locus in the ear-drum. It is always perceived as having its locus in another point of space. But if the ear-drum can never produce the auditory perception of sound without coming in direct contact with the sound, and if it can never go out to the locus of sound, where it is produced (शब्दोत्पत्ति देश), it cannot produce the perception of a sound having locus in distant point of space. All that it can do is to produce the perception of a sound having its locus in the ear-drum, because the hearing of sound is produced only when the sound is not in its original locus i. e. the point of space where it was produced, but when it is in the ear-drum. But as a matter of fact, we never perceive a sound as having its locus in the ear-drum, but in another point of space outside the ear-drum. Sounds coming from different directions are perceived as having different local characters. Whenever sounds are perceived, they are perceived as coming with particular characters. We have a distinct auditory perception in such a form as " the sound comes from this direction ". Thus when sounds come into the ear-drum from different directions, they come into it not as mere sounds but as coloured by the different directions from which they come, and the ear-drum being in contact with those sounds, is in contact with their local colourings also, and consequently, it produces the perception of different sounds with different local characters. Thus, though the ear-drum cannot come in actual contact with the direction of a sound, yet it can produce the perception of the sound with the local character of its direction. This is the reason why we perceive audible sounds not as seated in the ear-drum but coming from different directions outside the ear-drum. Just as there can be no independent perception of time apart from the knowledge of events, so there can be no independent perception of space in the form of direction through the ear apart from the perception of sound. In a dream, i a man does not hear or see anything he will not perceive any space and if he does not know any event, there will be no knowledge of time.

The absence of time and space is experienced in sound sleep where there is no perception of space because there are no sounds and no visions and no perception of time because there are no events. Therefore, space and time are qualifying adjuncts (विशेषण). But when we obtain knowledge of a qualifying object, the knowlege of quality must precede the knowledge of the object, otherwise there will be no qualifying knowledge. Therefore, unless we know what time and space are, we cannot know the object which they qualify. The Mimansaka holds that according to the above method, in the waking state we do have a direct auditory perception of space in the form of direction. The Naiyayik also holds that direction is perceived through the perception of east, west, and the like. But how can the local character of the sound be directly perceived through the auditory organ? i. e. how can actual distance be percieved through the ear? Sounds coming from a proximate point of space are perceived as most intense (तीव्र) but their intensity becomes feebler and feebler as they come from greater distances. Thus sounds are percieved as having different degrees of intensity according to their varying distances. And through these different degrees of intensity of sound sensations, we directly perceive the distance from which they come. But the local positions of sounds cannot be exactly ascertained without an act of inference from the directions and distances of sounds. The Mimansaka says that the real seat of the audible sound must be in the ear-drum because the perception of a sound is produced only when it has come in the ear-drum which is in direct contact with it. He says that just as in the illusory perception of silver in a shell, we perceive the shell before our eyes, but we reproduce the silver (in memory) perceived in another place owing to their similarity and erroneously connect the position of the shell with silver, though in reality there is no connection between the two, so we erroneously connect an audible sound with its original position in space outside the ear-drum, though in fact, the ear-drum itself is the real seat of the audible sound. This explanation of the Mimanka does not give a clear idea of distance or space.

The Buddist school of thought believes that the three organs of sense viz. smell, taste and touch apprehend their objects when they have a direct contact with their objects. The visual organ (eye) and the auditory organ (ear) can apprehend their objects without coming in direct contact with them. Thus a sound need not come from its locus of origin into the ear-drum in order to be perceived as the Mimansaka supposes; but it can be percieved through the ear though the ear is at a distance from the sound. And as there is a real connection between a sound and its place of origin, the extra-organic localisation of a sound-sensation is not illusory. There is no error of judgment in referring a sound-sensation to a particular point of space where the sound was originally produced.

To this, Kumaril Bhat of the Mimansaka school replies that if the ear can apprehend a sound from a distance without coming in direct contact with the sound, then it would simultaneously apprehend all sounds far and near. Hence according to him, the Buddhist theory is not sound.

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# CHAPTER 3

## Experiences of waking, dream and sound sleep.

According to Vedant, the universal consciousness is particularised by certain determinants. The following are two classes of determinants.

1. qualifying adjuncts or qualifications, विशेषण.
2. Limiting adjuncts or conditions ( उपाधि ).

The following are further explanations of the above two determinants:–

1. A qualification विशेषण is intimately connected with and inseparable from the qualified object, for instance, the particular colour of a jar qualifies it in such a way that the colour cannot be separated from the jar and as such it distinguishses the jar from all other objects.

2. A limiting adjunct or condition ( उपाधि ). on the other hand, does not qualify an object in such a way that it cannot be separated from it but simply limits the object to a particular time and space. Vedant believes that in the above example of the sound, the ear-drum is the limiting adjunct and limiting condition of the space of sound. Therefore, the sound is limited to a particular space and these two being उपाधि can be separated.

The following questions about space have been taken for consideration in Chitsukhi, the famous philosophical work on Vedant :–

1. Whether we are able to see the space directly ?
2. Whether our vision sees the space with the object ?
3. If both the space and the object are seen simultaneously, whether we see them along with the distance between them ?
4. Whether the vision of the object creates the distance ?
5. Whether the distance and object are perceived simultaneously ?

The first view point is not possible. Unless there are some objects, space cannot be known. The second view-point is also not possible because space is not visible to the eye as the object is.

Then we come to the consideration of distance भेद between the observor and the object observed. It can have the following two qualities :—

1. It may be the nature of the object स्वरूप भेद to create the distance.
2. It may be the quality धर्म भेद of the cbject to create the distance.

When we say that a pot ( घट ) is separate from cloth ( पट ), whether the distance is independently seen ? or whether the distance is formed by the opposite object पट ( प्रतियोगी ) ? The first view is not possible because there cannot be any distance independent of any object. If the opposite object (पट) creates the distance, whether the distance follows the knowledge of the original object घट or whether there is a simultaneity of knowledge of the distance between the two ? Evidently every cognition is one whole indivisible. But as distance is the effect of the cause which resides in the opposite object पट, the whole cognition cannot be simultaneous.

Cause and effect require some time, therefore, it is necessary to know the nature of time, and for finding the nature of time, we must know the nature of space; the two cannot be separated. Therefore, in the Vedant philosophy, the main help comes from the comparison of the experiences of the three states viz. the waking state, the dream state and the sound sleep. In the dream state, we have not to consider the distance between two objects but the interval between two events, because waking time does not continue in the dream state and dream time does not continue in the waking state.

Therefore, what is the nature of space between two objects or what is the nature of distance between the observor and the object observed are wrong questions. The main question should be what is the interval (व्यवधान) between one state and another state. Besides, this method agrees perfectly with the latest discoveries of the physical science. Why should we put a limit to our knowledge by taking into consideration only the experiences of the waking state and neglect the experiences of the dream and the sound sleep. When the experiences of these states are considered, space is changed into an interval. What is the distance between two objects in the dream state ? While we are thinking about this matter in the dream, suppose we happen to wake up, then we realise at once that there was no distance, the space was derivative and depended on the functions of the co-ordinates (प्रमाता, प्रमाण and प्रमेय) of the dream conditions. These co-ordinates change altogether in the waking condition and with these, our questions about time and space also change. But several persons are raising a question that the dream condition is destroyed atonce on waking but the waking condition persists for a longer time. This is not a fact; waking condition is also negated at once if one goes in the dream condition, in sound sleep, or in day-dreams or when somebody faints or is drowned or is chloroformed, or when he dies or when he gets self-realisation. This shows that the distance or space in the waking state is also marked by an interval, which is called व्यवधान in the Indian philosophical language. In the other Indian systems like Nyaya. Vaisheshik, Sankhya, Yoga, Mimansa and even in the integral Yoga of Shri Aurobindo, sufficient attention has not been given to our experiences of the dream state and the experiences of the sound sleep.

Besides, in the Indian philosophical works, the following four kinds of dissolution प्रलय of the world have been given ( vide Bhagwat 12-4 ):-

1. नित्य प्रलय-as seen in everyday changes of events.
2. नैमित्तिक प्रलय-This is experienced when the day of the creator Brahma is over.
3. प्राकृत प्रलय This happens when there is a dissolution of all the worlds in the original nature ( मूल प्रकृति ).
4. आत्यन्तिक प्रलय-This is experienced when all the states are negated by self-realisation i. e. the waking, dream and the sound sleep are

negated as having never existed, in reality, after one gets self-realisation.

In the first three kinds, the nature of time and space is not properly considered. In the last kind of dissolution, time and space become relative. It is possible to experience that condition even now by self-realisation as there is no fundamental space in which the objects are placed nor is there any fundamental time in which events occur.

To understand the nature of आत्यन्तिक प्रलय or the fourth kind of dissolution, we have only to understand the nature of the interval ( व्यवधान ) between two events. For this purpose, the modern science of relativity helps us very much.

Take, for instance, the following example about space:*–

My head is above my feet and my feet are below my head, is a clear truth. If we proceed in the direction from our head to our feet, the objects we meet are located the lower the further we proceed. But we know now that there are people living on the opposite side of the globe. According to our well-established truth, each of these persons has his head below his feet. But none the less each of them is convinced that his head is located above his feet. Therefore, the meaning of the words above and below are relative. Direction from above to below here means the direction of gravity on our side of the globe as the standard direction for the definition of 'up ward' and 'down ward', My head is above my feet and the feet of a man at the antipodes are above his head. But if we take the direction of gravity on the other side of the globe as the standard direction, everything is the other way about; my own feet are above my head. Therefore, we have to mention a specification or a qualification, which is really not a qualification but a limitation of time and space. If the standard of measurement is specified, both statements are right and they are in agreement with each other and with all other correct statements. When new facts are discovered, the language that used to describe our former poorer stock of facts becomes too poor to decribe our newly acquired wealth of knowledge.

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*This example has been given by Einsteni's, friend Phillip Frank, in his book Relativity – a richer truth.

# CHAPTER 4

## Discovery of the modern Science of Relativity.

According to the science of relativity, length or time is constituted by a group of operations which if carefully performed render one and the same value of length or time. Then we do not need to know the meaning of space or time from other sources. The statement that "this table is three feet long relative to the earth and the same table is five feet long with respect to certain stars" are both assertions of objective facts. But the statement "This table is three feet long" without mentioning a system of reference is formulated in too poor a language to describe adequately our rich experience about length. Therefore, the proper language is "this table is three feet long relative to this room". We require a description of the method by which we can check whether a certain rule is fit to be a universal maxim of action.

When the God Vaman (वामन) went to king Bali to beg for a piece of land equal to his three step, the king was surprised as to why he begged for such a small piece of land. But after the promise was given by the king, the God increased his measure of feet to such an extent that in two steps he measured heaven and earth and all worlds and no space was left for placing his third step. So the king in order to fulfil his promise requested the God to place his third step over his head. Here there is a clear indication that there are various methods to measure one and the same event with the result that there will be different intervals for one and the same event according to the nature of measure adopted. The wonder is that this measure will give objective results of space and can be used by other Gods in the same way to give similar results. The trend of modern science helps us very much in such integral education. Our educational system needs more emphasis on the kind of thinking that tends towards integration. Formerly philosophers were questioning the presuppositions of science. But now science is questioning the presuppositions of philosophy. Before Einstein's new physics, many philosophers took it for granted that expressions like "flow of time" or simultaneity of two events or two intervals had an objective meaning. The new science of relativity scrutinised these presuppositions of philosophers and invalidated them. Therefore, the time has come to discuss the nature of time and space in the light of these new discoveries. Recent research in the logic of science has made it sufficiently evident that no clear–cut distinction can be established between intermedate and ultimate causes in nature. Such a distinction can be made only within a particular system of principles (axioms), which is set up as the foundation of a field under consideration. We have now to consider laws of a system rather than laws of absolute space or time which do not exist. This is similar to finding the law of time and space in the dream system and the waking system. In geometry, it is arbitrary whether we choose a "straight line" as a basic and undefined concept, or we define a straight line as a set of points. The cause of phenomena can be either discovered by scientific methods or it cannot be discovered at all. If we venture to 'understand' the connection between cause and effect, the 'intermediate' cause is exactly as mysterious as the "ultimate cause". The jobs of finding and of interpreting facts are indivisible. If relativism is banned from the general rules, it slips in easily as the interpretation of the rules. The effect on the actual behaviour is the same. If a criminal is executed under a legal death sentence of a recognised court, the rule "thou shalt not kill" can be disregarded. This means that this commandment need be followed only relative to the circumstances.

Modern science says that perceptual space is within the perceptual event and as the perceptual event changes according to the system of reference, space is an illusion and because space is an illusion, the distinction between inside and outside becomes unreal. It is the spatialising activity of the mind which creates multiplicity and it is the temporising activity of the mind which creates sense of time. There are objective relations also but in those cases the subject has to become an object. Sir James Jeans says that when the time and space of an individual are welded together, the individual seems to fall out altogether; the constituents are subjective to a particular individual but the product is objective. When a billiard ball moves parallel to an edge of a table, it moves in a straight line. But the table rests on the earth, which rotates about the polar axis and also revolves about the Sun. To someone outside the earth, the same ball would seem to move in a very complicated path. Hence the ball apparently moves in a straight line only relative to a person in the same room. We are living in

Jagat जगत् which means in the Sanskrit language, something which is continously moving. Yet, modern science gives us principles and objective rules for gravitational systems. All systems that move uniformly along a straight line, relative to an inertial system are likewise inertial systems. It is comon experience that we can play with a ball in exactly the same way whether we are on board a train or in a ship so long as it does not jerk or roll. Therefore distance is defined by certain operations of measurements and not with reference to non–sensical conceptions such as the amount of emptiness between two points.

Suppose there are two germs in a man's body. There is some vacant space in the body. Each of the germs fights for more space in the body but the man has no consciousness of their fight because the measure of their space is different. Their system of reference is different. A man cannot know their life and their work unless he himself goes in their system and assumes the life of that germ.

Now we take the example of human space on the earth. People of one country are fighting with people of another country for more space for their increasing population, but the earth as a whole has nothing to do with their fight. But there may be many such worlds in the ether and some Gods may be fighting with one another for obtaining the whole of our earth. Our earth is but an infinitesimal speck of dust compared to the infinite spirit in the same way as a small space in our body for the germs fighting therin is a very small portion of space compared with the space outside the body in which aeroplanes are moving. Right thinking leads us beyond all boundaries. In political life there is no right thinking, each man wants to display his vanity, each man wants to rule others. Lust of power is at the root of all wars. Each man thinks that his method alone is the best for the whole world. What vanity! Reformers want another kind of form but they do not go beyond all forms, therefore, they create more problems and more quarrels. A thousand years is nothing compared to eternity and self-government of the whole earth is nothing compared to the immensity of space in another system of reference. Rest and motion have become relative. Anything is at rest if it is immobile relative to the earth's surface as the standard body. A man may be sitting on a chair but the germs in his body may be moving in the inside space and his chair with the earth is moving round the Sun. According to the theory of relativity, space is no longer the stage on which the drama of physics is performed, it is itself one of the performers. Gravitation, which is a physical property, is entirely controlled by curvature, which is a geometrical property of space. The changes of position of particles, in their turn bring about changes in the curvature of space, so that particle and space together may be regarded as a single system, whose evolution is determined by the law that the total curvature of space-time is to be a minimum. We may inquire with respect to any object within the world what is its location. but we cannot inquire what is the location of the world as a whole while remaining on the earth. Before the dream, one man can locate himself that he is sleeping in a room but after the dream begins, a new-time-space continuum is formed and he finds himself at a certain place in the dream system, which is not a real place at all, although it cannot be negated in the dream state, There fore, in the Vedant philosophy, we do not negate the world in the state in which it appears as existing. We take into consideration the system of reference. This is called अनिर्वचनीय ख्याति i. e. the world is neither true nor false. The Vedant philosophy leads us not to a negation of existence but to a transcendence of conception. Therefore, human space is true within human limits but human limits are not true. Modern science also says that general laws cannot be inferred from mere experience. They are to be tested by experience but they owe their origin to the inventive faculty of the human mind. Indian philosophy also says that mere experience ( प्रत्यक्ष प्रमाण ) is not a safe guide. It must be tested by the spiritual visions of the ancient Rishis ( श्रुतिप्रमाण ). Our knowledge of the external orld cannot be separted from the notion of the appliances with which we have obtained that knowledge. This is called instrument of measurement in the new science and is called प्रमाण in the Indian philosophical language,

The determinism of the physical laws simply reflects the determinism of the method of inference. Space in the new science is finite though unbounded. This is like the Anirvachaniya Khyati of the Vedant philosophy. In the dream condition also, space is finite though unbounded. When we wake up, the boundaries of the dream space are broken. When we go from the waking state to a dream state, the boundaries of the waking state are also broken.

# CHAPTER 5

## The Sankhya method of reasoning.

In the Sankhya and the Yoga method of thinking, space is considered as Dik or direction and has been included in the following trinity ( त्रिपुटि )

शब्द = अधिभूत
श्रोत्र = अध्यात्म
दिक् = अधिदैव

Which means :–

Sound = material thing.
Ear = Something like spiritual.

Direction–Something like governor of space.

This trinity comes together. The philosophy of the Gita has shown how to transcend these three. It also says that these are created by God, but God is not subject to them. The question of time and space is not discussed there. Gita deals only with the experiences of the waking state. Experiences of the dream state and of sound sleep have not been considered therein.

In the western countries, before the discovery of the theory of relativity by Einstein, when the mechanics of Galileo and Newton prevailed, the physicists of that period always felt uneasy in using the expressions "absolute space," "absolute time" "absolute motion," "universal ether." Newton himself wrote at one place that it is, indeed, a matter of great difficulty to discover and effectually to distinguish the true motions of particular bodies from the apparent, because the parts of that immovable space, in which those motions are performed, do by no means come under the observation of our senses. Therefore, God and his consciousness must be added to the physical facts. Newton believed God to be omnipresent in the literal sense, and that as we are sensible of objects when their images are brought home within the brain, so God must be sensible of everything, being intimately present with everything, for, he believed that God was present in space where there was no body. He was present also in space when a body was present. This meant that all motions, relative and absolute were the result of Divine energy.

The Sankhya system and the Jain system do not believe in a separate existence of supreme God who may be controlling the events of the world. They believe that if there is a God controlling all the affairs of our world, no body can be wicked. Therefore, they believe that all events follow their natural course. These beliefs are correct if the experiences on which they are based are correct. If there be a regular system of events and a finite interval between them, why are the events in the waking condition negated in the dream condition and vice versa ? Besides, who has created the space between God and man and man and man and other objects ? In the Sankhya and the Jain systems, space is fundamental, they do not believe in the Vedantic non-dualism. In the western countries also, upto the end the nineteenth century, space and time were considered to be fundamental, and people believed in the possibility of continual progress, but their faith in progress did not succed in abolishing the economic misery of the great mass of the population or in eliminating the psychological suffering of individual human being. A feeling of despair developed which expressed the conviction that scientific theory and practice were a disappointment. Then came Einstein's theory of relativity which indicated that time and space must have a stop. But as it is difficult for many persons to grasp it in all its psychological and philosophical implications, several intelligent persons say that they do not know whether the world is progressing or going back. Taking into consideration the question of wickedness, it would be wicked for a son to disobey his father but it would also be wicked to obey a wicked father. People must obey the laws of its Government but if the laws are harmful, they begin to disobey the laws. This was done in the Satyagraha movement in India. There is relativity in moral principles also.

The Sankhya system of thinking starts with three qualities of moral principles viz. Satva, rajas and tamas. They disturb the minds of men and mind again disturbs those qualities and creates a system from which it is very difficult for a human being to get freedom. It is stated in Bhagvat that a question was raised once by the sons of Brahma ब्रह्मा to Brahma as to how to transcend this vicious circle ( 11–13–17 ). Brahma could not reply. Therefore, they meditated on the supreme God who appeared before them in the form of Hamsa. Then, they asked Hamsa who he has ? The Supreme God in the form of Hamsa replied that as the spirit is one without a second and as there is nothing else, to whom are you putting the question ? and how can I reply ? yet know ye that all this is one absolute spirit, the spatial and temporal divisions are non–entity and false limitations of the Absolute, therefore, they should be transcended. The waking condition is similar to the dream condition ( 11–13–27 ). So long as a man does not overcome differences by right knowledge, he is in the dream condition ( 11–13–20 ). All motions, all kinds of times and spaces i. e. of the waking condition are as false as those of the dream state.

Here the question was put from the point of view of the Sankhya system but the reply was given from the point of view of the Vedant system. It is the custom in the Indian philosophy to negate the divisions of time and space by means of the experiences of the three states viz. waking state, dream state, and the sound sleep. But now the science of Relativity proves by taking experiences only of the waking state that time and space are relative and therefore we must stop and consider the nature of progress and the system of reference before considering whether the world is progressing or not and when the progress will end. Space–time is not the frame–work of the world of nature but of the world of our sense–perception. The laws of nature tell us nothing about nature but certainly something about ourselves. The mistake lies in taking our perceptions to be the physical world.

B. Russel says that "the dreams we call waking perceptions have only very little more resemblance than the fantastic dreams of sleep. To some extent each man dreams his own dream and the disentanglement of the dream element in our percepts is no easy matter. All adaptation to environment might be regarded as learning to dream."

In other words, we are creating spatial differences by erroneous thinking and erroneous observations as explained in the first chapter of this book. Space is a character of perception and not a character of the external world. We get this experience in the dream condition. The dream space does not begin before the dream begins and the modern science says that the space that we experience in the waking state also does not begin before the waking state begins. This is proved also by the Vedant philosophy as given in the Mandukya Upanishad. When a man transcends time and space ever so slightly, he will experience properties of the mind as a whole.

Propositons about the state of a system prior to the moment at which it is given are meaningless. A whole range of times and spaces can be assigned to the same event. But philosophical systems other than Vedant like Sankhya, Yoga, Vaisheshik, Jainism &c do not take into consideration our experiences of the dream state and those of sound sleep. Even in the integral Yoga of Shri Aurobindo, there is very little discussion about the philosophy of dream experiences. I have met several yogis and found that all of them make a mistake about time and space. It is only in the Vedant philosophy that the question has been solved by the substitution of the Ajatvada (non-creation) in place of the parinamavada (creation) of Sankhya, Yoga, and other schools of Indian philosophy. If the mind which is not anywhere becomes conscious of a visual scene constructed so as to present the surroundings as from a particular point of view in space, it will have the illusion of itself being at that point of space.

As the destruction of dream is complete at the time of waking, so all the effects of ignorance will vanish with the rise of wisdom. Status of actuality or potentiality of a perceived region depends not so much on the region itself as on the mode of the percipient's reaction to it. The ideas of space and time are ideas of relations and may be said to imply the existence of something which perceives those relations. If a tactile sensation is a state of the mind and localisation of that sensation is an act of the mind, how is it conceivable that a relation between two localised sensations should exist apart from the mind. Thus it seems clear that the existence of some of the primary qualities of matter such as number and extension apart from mind is as utterly unthinkable as the existence of colour and sound under like circumstances. If distance and place are inconceivable in the absence of the mind of which they are the ideas, the indepedent existence of figure which is the limitation of distance and of motion which is change of place must be equally inconceivable.

# CHAPTER 6

## The Yoga method of practice.

There are two ways of bringing out unity viz :—

1. The Sankhya and the Jain systems believe in unity in the soul which is detached from inert matter जड अतिरिक्त. In practical life real dualism remains. Therefore space is fundamental for them.

2. In the yoga system, and in the path of devotion, we have to unite differences.

When we have to unite differences as in the yoga system, the observer, the object observed, the instrument of observation and time and space, all these, have to be transformed by Yogic practice of meditation. In the ordinary relation, the spirit identifies itself with inertia or matter; this brings about a good deal of limitation and disintegration in time and space and therefore brings misery. In ordinary life, self is made by the not-self; it requires multiplication by marriage and social relations. Therefore, it creates for itself a sort of inertia or gravitation field. As in dream, so in the waking condition. In the theory of gravitation, we are acquainted with the law of attraction between material bodies. The theory of relativity also says that gravitation forces and inertial forces have so much relation that it is not possible to distingusih by means of mechanical experiments carried out in a laboratory or in a field, the accelerations that arise from inertial forces and those that arise from gravitational forces. This means in the Indian philosophical language that it is difficult to separate the spirit from rajas or tamas (inertia) by any mechanical methods. Therefore, the methods of yoga or of Vedant are necessary for the purification of the self. In the presence of a purified self viz. योगी, the nature of space changes, for instance:—

अहिंसा प्रतिष्ठायां तत्सन्निधौ वैरत्यागः 2–35.

In the presence of a man who has no ill-will towards anyone, men and animals of evil nature give up their animality. Contrariwise, in the presence of a passionate man or woman, other persons also become passionate. In such cases also, space changes its character. Therefore, we require good atmosphere everywhere.

It is also stated in the yoga–Sutra (2-19) as follows प्रत्ययस्य परचित्त ज्ञानम् ।
by concentrating on another man's mind one

can know another's mind. By this method space is dissolved into unity. The solvent of the space is meditation on the spirit which is one in all beings. If a Yogi concentrates on the Sun, he gets a knowledge of the three worlds. It is said that during the world-war II, the famous Indian yogi shri Aurobindo concentrated his sprit in such a powerful way that Russians got victory over Germany and Japanese were prevented from entering India. This means that according to the science of relativity and also according to the Yoga philosophy of India, the structure of space is not determined until the functions of the co-ordinates are settled. In America, Prof. Rhine, and others are making experiments similar to the Indian Yogic methods to get a knowledge, by para-psychology, which overcome the divisions of space and time. The values of variables are determined by the system of co-ordinates used. The size of an event is equivalent to its measures of space and time. Status of actuality or potentiality of a perceived region depends not so much on the region itself as on the mode of percipient's reaction to it. When we measure distance, according to the new science, in centimetres, the corresponding unit of time is not the conventional second but a relational unit of time represented by the interval of time necessary for a light signal to cover a distance of one centimetre. If this speed applies to physical light measure, how much more speed can we get by Yogic or spiritual light ? It is possible to convert space intervals into time intervals and the other way round as will be seen from the following examples:-

1. If anyone wants to go from Bombay to Calcutta, the distance can be changed by going by motor car, or by train or by plane.
2. By means of yogic methods, and yogic light, the distances between this world and another world also can be changed. This means that the numerical value of a given distance or period of time will be different when measured from different moving systems.

J. B. Rhine writes in "the Reach of the mind" page 195 "that according to the methods of extra-sensuary perception, the mind can identify a specific card in a deck located a thousand miles away. Then, nothing will prevent any knowledge hidden any-where in the world from being reached by such power."

When the extra-sensory perception and of psychokinesis transcend time and space ever so slightly or infrequently, they are revealing fundamental properties of the human mind as a whole. It is a function of the total personality.

This possibility has been recognised in the yoga philosophy of India. It has been clearly explained in the third chapter viz. विभूति पाद; for instance, in sutra (3–33) the following statement is made

प्रातिभाद् वा सर्वम्

By right knowledge of the spirit, the yogi overcomes spatial and temporal divisions and gets a knowledge of several far-off events and events of past and future conditions. The American para-psychologist Rhine is trying to acquire such knowledge. He says that by this method, war plans and crafty designs of any kind anywhere can be watched and revealed. Every secret weapon and scheming strategy will be subject to exposure. The localisation of the hidden wealth of the world, mineral and non-mineral will be charted, because there is no fundamental space.

Even now, owing to scarcity of food in India and consequent necessity of finding underground water, wherever possible, the Government of India have found a man, who can see water below the earth-crust. He is called the water-diviner. The Government of India has engaged him on a good salary and several successful wells and borings have been made with his help. For this man, the space of the earth-crust has a different meaning. Rhine also says that mass, distance, and other physical characteristics as far as they have been tested make no difference in the para-psychology. By their very inter-action, the mind and the object functionally become one system and qualify the dualism that appears to exist.

It is stated in the Yoga philosophy that it is possible to conquer spatial and temporal divisions and therefore it is possible to obtain several powers like **अणिमा, लघिमा, महिमा** &c and when one gets aversion to worldly sensual pleasure (**वैराग्य**) it is possible to get salvation, which means freedom from the limitations of space and time. Death is purely a matter of coming to a halt in space-time universe. Time, space, causation which always accompany objective reality, both in the waking and the dream state, are no more than ideas which vary with individuals. They are relative to use a modern scientific term.

# CHAPTER 7

## Space in astrology

Astrology believes that when a child is born, he comes under the influence of certain stars. An astrologer ascertains the exact time and place of his birth, then calculates the position of stars and tries to find the future events of the child. This is called ज्योतिष शास्त्र in the Indian language. This also means a gravitational field created by the light rays. Gravitation means mutual attractions. As the child grows, there is mutual attraction between him and the world around him. His mind is coloured not only by what he sees but also by his past inherited tendencies. He sees a space outside but does not know where that spaee may be ending. But astrology tells him that the stars which are related to him do fix his course of life. These events are forecast by a good astrologer by means of a Kundali (कुण्डली) which is something like the curvature of space produced by past, present and future events inherent in his observations. According to the modern science of relativity also, events in a man's life have no absolute values but values relative to chosen frames of reference. These frames can be changed by changing the condition of the observer. In the theory of Relativity, an observer is placed anywhere with a view to find general physical laws, and the curvature of space. In practical life, the condition of the observer can be changed by good actions, by meditation and yogic practices and by vedantic knowledge which is equal to detachment from body and acceptance of spiritual nature of the soul. Even a small detachment from body and mind, created by some spiritual practice, will enable a man to transcend the time-space limitations shown in the astrologer's horscope. Events have many sizes relatively to the corresponding stand-points. If two persons do not like each other, we say that there is a great distance between them. If they love each other, we say that they are intimately one. The order of events in the external world is a four-dimensional order. An observer either intuitively or deliberately constructs a mesh system ( i. e. space-time-partitions ) and locates events with respect to these. Hence the geometry in a field of gravitation is non-euclidian.

We select the co-ordinates for ourselves and we select them in the most convenient way suitable to us. But different observers studying different problems at different times will find it advantageous to utilise different systems. If we drop a coin straight down a ship's side, it will have various tracks in ship space, sea space, earth space, sun space, star space and they are all relatively real and the one which will be singled out for attention depends entirely upon the observer and the system to which he refers the motion.

In dream experience, earth, roads, mountains, and rivers etc. denote only forms of empty space or curved space, so in the waking state, they are bits of curved spaces created by gravitation fields due to mutual attraction and repulsion. It is stated in the Bhagwat ( 11-10-32 ):-

यावत्स्याद् गुणवैषम्यं तावन्नानात्वमात्मनः ।
नानात्वमात्मनो यावत्पारतन्त्र्यं तदैव हि ॥

i. e. so long as a man will have likes and dislikes, he will experience a multiple personality, he will also be dependent on something. Therefore, every observer lives in his own imaginary world. Modern science also says that the only events which a man experiences are events at himself. We cannot speak unambiguously of the distance between two bodies at a given time. If we take the interval appropriate to one of them, we shall get one estimate; if the interval of another, another estimate. If two sons are born of the same mother, at few minutes interval, it creates a great difference in the horoscope of the two children. A man's space-time framework proves inadequate for the representation of the whole of nature. Events which are agents of the physical world are described by dispositional characteristics i. e. by charactristics which are not manifested unless an observer is present. In sound sleep there are no events because in that condition presence of a separate observer is not felt as in the waking condition.

When cinema-shooting is prepared' the director has to measure the space according to the measure of human vision and he has to take the photographs according to the capacity of human vision. If the time and space are not regulated at the time of shooting, the audience in the cinema-show will not be able to see or hear anything. In the same way human world is automatically adjusted according to human vision and the same world as seen by a dog is adjusted for him according to his measure of vision. B. Russel says "all adaptation to environment acquired during the life of an individual might be regarded as learning to dream, dreams that succeed rather than dreams that fail. The dreams we call waking perceptions have only a very little more resemblance to objective reality than the fantastic dreams of sleep". This is also very clearly explained in the second chapter of the karika of the Mandukya Upanishad, which is one of the best philosophical works in India. The question of space has not been taken for special consideration in such works because space is a product of mind and comes in existence as a functional dependance. As in dream, so in the waking condition. A proposition has no content unless a measurement process is specified by which conservation can be tested. Astrological science is based on this principle. There is a caste of joshis (i. e. Astrologers) in India, who are expert in finding out the measurment process of each individval. This is a mathematical science, and if the joshis of India study the theory of relativity which is based on the velocity of light (i. c. ज्याति), they will be able to do good research work. The question is not what the space is but how we come to know what we know about space. How do we know about the space in the dream condition? The condition is such that no experiments made in that condition will show us the mistakes. The measure which creates the dream will not allow us to find the mistakes in the dream. For this purpose, another measure is required. The knowledge of the waking condition brings us into a new time-space system. The waking system destroys the dream system completely. Similarly the waking condition is also relative. The space-time partitions of the waking state also are dissolved in the dream state where new time-space measures are created. In the waking condition, although we see the sun now, the physical object inferred from our seeing existed 8 minutes ago, because the light of the sun takes 8 minutes to reach our earth. If in the intervening minutes the sun goes out, we shall still be seeing exactly what we are now seeing. We cannot therefore identify the physical sun. For the same reasons, the tables and the chairs that I see if they are identical with my seeing of them, are located where my seeing is. In short, the relation of a percept to the physical object which is supposed to be perceived is vague, approximate and somewhat indefinite. There is no precise sense in which we can be said to perceive physical objects. If objects are not wholly and absolutely what they seem, then space is also not wholly and solely what it seems. Modern physic is interpreted without assuming an absolute space. An element of creation enters into ordinary everyday perception. The view that external objects exist in space as we see them is difficult to maintain; our perception provides a good deal of the environment.

The 'I' sense being limited to the body of the seer, he cannot help imagining that in everybody that he sees, there is a separate person. Thus the notion of you and he arises. This is ignorance.

# CHAPTER 8

## Vedantic method of denying differences.

According to the vedant philosophy, the Absolute (ब्रह्म) is the only reality and as the absolute pervades everewhere, there cannot be any question of space. In the physical science also, it was formerly believed that if all material things disappeared out of the universe, time and space would be left. According to the theory of relativity, however, time and space disappear together with the things, because what we see is a system (अवस्था) and not objects.

As stated above, in the Vedant philosophy, there is nothing except the absolute (ब्रह्म) i. e. there is nothing or no other thing which means no-thing. This is made clear by means of the examples of an earthen pot made out of earth or golden ornaments made out of gold. In these examples, as the original substance remains the same, so anything coming out of the Absolute spirit is nothing but that spirt. When we see anything else and also a space, that is due to ignorance of the nature of the Absolute spirit. When we see a serpent where there is rope only, the serpent appears with the space between the observer and serpent as an adjective (विशेषण)

or as a limitation ( उपाधि ). When we get the right knowledge that it is only the rope, the serpent and the space both are negated as never existed. The appearance of motion is explained by means of a light produced in a fire-stick ( अलातचक्र ) where although a new quality appears, no spatial difference is created between the former quality and the new quality produced by motion. This is explained in the fourth chapter of the Mandukya Upnishad and in the thirteenth chapter of the 11th Canto of shri Bhagwat. It is stated there ईक्षेत विभ्रमिदं मनसो विलासं (Bhagwat 11-13-34 ) i. e. इदंता or space is a mental conception. As in dream, so in the waking condition. The whole world with all its time-space divisions is due to ignorance of the true spirit or soul. This means, in other words, that for right knowledge, we have not to unite differences but to deny differences. In uniting differences, we have to assume some fundamental space and this cannot exist without assuming some fundamental ( real ) particles, other than the pure absolute spirit. But as the Absolute pure spirit is the only reality which cannot be negated and everything else can be negated, we pass to a new condition which means that space cannot exist as a fundamental reality. It is said in the Vedant philosophy that न सोऽस्ति प्रत्ययो लोके यत्र सता न भासते i. e. that which has no self-existence has no existence. Space has no self-existence. It does not exist by itself, i. e. by its own power therefore it has no existence. यद्धि यं व्यभिचरति न तस्य स्वाभाविको धर्मः यथा शुक्तिकायां रूप्यम् ।

That quality in a thing which is negated in other condition is not a true quality of that thing. A question has been asked by king Parikshit to Shukdev as to who has created the space between matter and spirit ( Bhagwat 2-8-7 ) to which Shukdev replies :

आत्ममायामृते राजन्परस्यानुभवात्मनः ।
न घटेतार्थ संबंधः स्वप्नद्रष्टु रिवाञ्जसा ॥ ( 2-9-1 )

i. e. There is no relation of anything with the Absolute without माया which means a measure. This is corroborated also by the modern science of Relativity in which it is stated that distance is defined by certain operations of measurement and not with reference to non-sensical conceptions such as the amount of emptiness between two points. In other words, our knowledge of the external world cannot be separated from the notion of the appliances with which we have obtained that knowledge. The determinism of the physical laws simply reflects the determinism of the method of inference. There can be no unity between the Absolute and the world. The world has no existence because it has no self-existence प्रपञ्चस्य अनिर्वचनीयत्वेन तेन ब्रह्मणोऽभेदानङ्गीकारात्. In the अद्वैत रत्न रक्षणम्, the famous author Madhusudhan Saraswati; has given several arguments to refute द्वैत or duality; and this means negation of space. Modern science also says about space that we cannot speak unambignously of the distance between two bodies at a given time. If we take the time appropriate to one of the bodies, we shall get one estimate, if the time of the other, another estimate. The interval or व्यवधान depends on the route chosen for travelling from one event to another. It is impossible for two persons at the same time to have exactly identical percepts. Therefore, the space of percepts like percepts is private. There are as many perceptual spaces as there are percipients.

An important question naturally arises as to whether there is more than one observer. I discussed this point with Shri Raman Maharshi in August 1944. Shri Maharshi pointed out that the very assumption of two observers being situated at two given points is itself an unwarrented one. That is, taking for granted that there are two individual observers, the principle of relativity must itself apply to the space-measure separating the two. In other words, space between one observer and another being relative and unreal, there cannot be more than one real observer. Where there is the least difference, there is the ego, and if the difference is conceded, unity ( अद्वैत ) would merely be a theoratical proposition. The transition from the ego to the egoless state, if it can be called a transition is not through a change or evolution from the lower to the higher nature in man but through the total denial or destruction of the egoistic state. It is like a man waking from a dream and this transition from the dreaming state to the waking cannot be called an evolution from lower to a higher state; it is the total negation of one state in the other. He alone gets perfect enjoyment who renounces the idea of separateness.

Shri Raman Maharshi once gave the following example as to how a man through ignorance creates a separation in the one Absolute spirit. There is a custom in some parts of southern India to perform daily worship of Lord Ganesh. A certain poor traveller who was a devotee of lord Ganesh was once passing through a sparsely inhabited country. Not finding a temple of Ganesh anywhere nearby to enable him to perform his daily worship to the Image before his midday meal, he resolved to make an idol of the deity out of the small quantity of jaggery which he was carrying with him ( with flour &c. ) and perform the ritual before his meal. Having made the idol out of jaggery, he proceeded with the ritual in right earnest. And then to his bewilderment he found that for the purpose of नैवेद्य or food-offering, he had nothing sweet left in his luggage, since he had converted all the jaggery he had in making the idol. But no worship is complete without the customery नैवेद्य i. e. food-offering So the simple-minded wayfarer pinched out a small bit of the jaggery from the Idol itself and offered the bit as नैवेद्य to the deity. It did not occur to him that in the very act of pinching out a bit of jaggery, he had defiled the very idol which he wanted to worship, and had, therefore, made both the worship and the offering worthless. Those who want to surrender to God, first separate themselves from God and therefore like the devotee in the above example, they make the surrender and the worship incomplete. Dr. Jung who is a well-known psychologist in Europe, writes :- " The identification of the self with God will strike the European as shocking. It is a specifically oriental realisation ". Ordinary beings are unable to analyse their experiences, much less a conflict, for they do not fully understand nor do they live intelligently their experiences of life. The plenitude of an experience can be known when one becomes a complete spectator of it. Even in our ordinary limited experiences of joys and sufferings in life, our self goes so much in our acts that a disinterested outlook becomes difficult. We screen truth by our hopes and fears, by our desires and disappointments. The mind in dream appears to us as dual in the forms of cogniser and the cognised through ignorance or Maya as the snake appears to be other than a rope through ignorance. Similarly the mind acts in a dual form in the waking state also through Maya i. e. a kind of measure. The subject, object and the space between them is created by the mind; they come into existence together and are negated together by right knowledge. For a true subject, there is no object and therefore, there is no space.

The psychic Universe is unique to each ego. This is fairly recognised by many philosophers but that the physical universe itself i. e. our conception of it, is entirely mental is now becoming fairly well-accepted by some of our most distinguished scientists. Given two events A and B in different regions, it might happen that according to one convention, they are simultaneous, according to another, A was earlier than B and according to yet another, B was earlier than A. No physical facts correspond to these different conventions. When one sees the sun, it is stricty speaking an event in himself that he is knowing. We are not in a mood proper to philosophy so long as we are interested in the world only as it affects human beings. Neither size, nor date which are variously determined by different observers should be taken as intrinsic properties of an event. In the language of the Gita:-

या निशा सर्वभूतानां तस्यां जागर्ति संयमी ।
यस्यां जाग्रति भूतानि सा निशा पश्यतो मुनेः ॥

Where it is darkness to all living beings, there the one with the senses and the mind controlled is awake; wherein the living beings are awake, that as darkness sees a saint, " Dr. Eddington says " the frank realisation that physical science is concerned with the world of shadows is one of the most significant advances in modern times. Modern science says that space means nothing apart from our perception of objects and time means nothing apart from our experience of events."

For an ignorant man the standard of reality is the waking state, whereas for a man of right knowledge, the standard of reality is reality itself. We shall never get at reality if we take the appearance to be real. When a man is lost in temper or does something ignoble out of greed or envy, we say that he has lost himself. This phrase is very significant.

The I-thought is the very first thought. Every other thought rises after the rise of the I thought and involves this I-thought. When we consider the question of any space, I-thought is involved in every one of these operations as I see, I hear, I think, etc. When there is notthe I-thought, there will be no other thought and then there will be no question of space. Modern science very often talks about the size of an event i. e. its time-space measure. This size has meaning only when referred to a bounded entity which is the embodied self, the ego. Measurements of distances and times do not directly reveal properties of the things measured but relations of the things to the measurer. If we eliminate the observer or the act of experience, we eliminate like-wise, the length, duration and the relation of succession. As in dream, so in the waking condition. The idea of substance must be derived from an impression of reflection if it really exists. But the impressions of reflection resolve themselves into our passions and emotions, none of which can possibly represnt a substance. Motion, extension, and solidity which characterise material bodies are characters of perception and not characters of the external world.

According to the Indian philosophy, the idea of spatial division arises when one quality which is at one place does not exist at another place, i. e. there must be two objects. For instance, if there is an earthen pot घट and a piece of cloth पट, the quality of the one does not exist in the other thing. We may take another example. There is ether (आकाश) in the jar and there is ether (आकाश) in a piece of folded cloth, then the two ethers are not separate and there is no space between them. The quality that is at one place is also at another place. Now, we may consider soul or spirit (चैतन्य) in place of ether and then we shall find that that quality exists everywhere, therefore, there cannot be any spatial division for a man who sees spirit everywhere. Therefore, when we see any difference, that is due to ignorance. Knowledge is spirit and spirit is knowledge; therefore, division of space comes only when there is limitation ( माया ) which is another name for ignorance. ( अविद्या ). Liberation or salvation ( मोक्ष ) is equal to liberation from time-space limitation. It is stated in the Chhandogya Upnishad " सदेव सोम्येदमग्र आसीत " all this was सत् one eternal spirit in the beginning. Therefore division was a subsequent creation. But division of space is relative प्रातिभासिक. There is no प्रमाण ( measure ) in science or philosophy to treat space as fundamental. But if a man's life is subjected to the three qualities of Maya viz. satwa, rajas and tamas, spatial divisions will be felt as one quality may not be found at another place. If however a man is leading a spiritual life, the existence of spirit will be found everywhere and there will be no spatial division. In सृष्टि-दृष्टिवाद i. e. in the idea of creation, we see the space as fundamental and self-existing before a man sees it. In दृष्टि-सृष्टिवाद, space is derivative as the world does not exist before a man sees it. If the reader of this small book has got a good knowledge of sanskrit, I would advise him to read अद्वैत रत्न रक्षण of Shri Madhusudan Saraswati, where duality or द्वैत is refuted in several different ways. There is one moon, but it appears to be many, when reflected in different pools of water. In cinema shows, all the differences are due to the manipulation of one light. If the electric current coming from the power house, owing to some accident suddenly stops, all the cinema shows in the whole city will automatically stop and all :the differences and spaces between man and man and things in the picture will at once disappear. Similarly in the dream condition many events may be taking place but if the man awakes, all the events come to a stop. In the waking condition also, if a man goes in a dream condition or in a day–dream condition, or when a man is chloroformed, this world with all its divisions will not exist for him. What a man sees around him is not the world at all but rather a peculiar interpretation of the world which he makes with his senses. Unreality or illusion never resides in the event or thing–in–itself, nor, even in a man's interpretation of it which is true enough for him but in the fact that he takes his interpretation to be the thing–in–itself exalting it to the stature of an absolute and independent reality.

Therefore, it is our attitude to the world that requires to be modified, not the external world. Appearances are peculiar to each perspective i. e. an appearance is owned by its perspective and it is difficult to understand how this ownership can be shared by other persons in all respects. A man who is in a dream condition cannot ask others in his dream to wake up when he changes his perspective by waking. Just as an owl, when it becomes man, has to give up entirely its owl-world, so a man has to give up his mental divisions when he rises to the supramental level.

Sense perception must be understood as brought about by a substraction from the reality of all that which owing to the condition of this form of awareness cannot be included in it. In sense perception, all the higher aspects and dimensions of reality are as it were unconsciously extinguished and this is the reason for its perspective limitations. The true world space must be considered not in relation to spatial but to an unspatial subject or rather to a subject able to produce space by self-knowledge and therefore also to dissolve the continuity of the objective world-space into the discontinuity of images and ideas ruled only by the continuity of time or eternity. In one case, the space is empiric, in the other it is ideal. In one case, the tendancy is to fill it with concrete sensual material; in the other case to empty it of all qualitative contents. A-priori space is a constructive product of the subject, which, therefore as the producer must precede the product, and which cannot itself be spatial in the sense in which the body is so. The physical power begins and ends with divisions and the power of philosophic knowledge begins and ends with unity. The self as will is hiding itself and its inner nature by the very act in which it reveals the objects of physical power. By means of sensations, we live in space. By virtue of our conscious inner activity, we learn to know space in things, gaining what we may call a power of omnipresence. No complete view can be obtained so long as we separate our consciousness from the world. We shall never realise the higher depths of our true life so long as we regard nature as the not-self. The power of seeing with our bodily eye is limited to the these dimensional section. How small a place in the life of an average political or social leader is occupied by the thought or quest of truth ?

Infinity is not infinite continuation in one direction but infinite variation at every point.

Higher thinking or spiritual thinking will disclose the fact that there are no fundamental divisions and that everything is alive, that all things think, feel, and can speak to us. One of the conditions for a right understanding of the world is the destruction of the sense of separateness in one-self. The quiet mind of a sage is the mirror of heaven and earth. The opposition which ordinary knowledge sometimes implies is an opposition within one reality. It is not an opposition between two alien realities. As in dream, so in the waking condition. The without is always within. The law which governs a spiritual act has nothing in common with laws characterising natural facts. We may take a point for observation as one among other points. This is the point of multiplicity. But there is also the vision of unity. The element of unreality is not in life but in our interpretation of it. Spiritual act does not posit the manifold without unifying it in the very act which posits it.

Strictly speaking there are not many concepts because there are not many realities to conceive. When the reality appears multiple, it is because we see the many and are not able to negate the space which is derivative. When space is negated, the whole is whole. Number cannot enter into the nature of what cannot be objectified. Therefore, there is only one true concept. The synthesis is not subject and object, but only subject. The conflict in a man's life is not only between good and evil but between knowledge and ignorance. The greatest need of our world is the discovery of a new and correct understanding of life. Religion has to do with man's relation to God. Politics have to do with man's relation with man. The first relationship is between imperfection and perfection; the second between imperfection and imperfection. Religious or philosophical intuition brings us to a non-spatial world i. e. spirit.

# CHAPTER 9

## Comparision between different schools of Indian Philosophy.

In practical life, no work can be done without accepting some time and some space. But they are (माया कल्पित) due to some kind of observed measurement. We think in relation. If we think that the relations are facts, then time and space are facts. Relations are subjective but we can make them objective. Similarly time and space are subjective but we can make them objective. When they are treated as subjective, they are more consistent with the (आभासवाद) theory of appearance; when they are treated as objective, they are more consistent with the (अवच्छेदवाद) particle theory. In the Brihadaranyaka Upanishad, a dialogue between various sages that took place in the court of Janak, has been given. After proving that everything is contained in the ether, a question has been raised as to where ether remains. To this, the reply has been given that the Absolute (Brahma) is greater than ether, because it is beyond time and space. In Lalita Sahasranams, the Goddess Lalita is called व्योमकेशी i. e. ether is the hair of the Goddess.

Brahma is also placed as equal to ether आकाश i. e. infinite space. But at several places, space or आकाश is taken as created from the Absolute Brahma. In Siddhanta Lesh of Appay Dikshit (1-111) it is stated that some consider that when silver appears in a shell, space appears first and some consider that the knowledge of space cannot be separated from the knowledge of silver. The latter view agrees with the science of relativity. As illusion appears to be a fact at the time of illusion, as dream appears to be a fact at the time of dream, so waking condition cannot be negated by the knowledge which creates that condition.

We must, therefore, acquire such knowledge that no division may be felt at anytime. It is said in Bhagwat (3-15) that once Sanakadi (4 brothers) went to Vaikuntha, the abode of Lord Vishnu. There were two door-keepers by name Jay and Vijay. As Sanakadi were very young i. e. only 5 years of age, the door-keepers prevented them at the door and did not allow them to enter Vaikunth. Then, Sankadi gave them a scolding that great men do not see any difference anywhere. Ether in a jar and the ether outside are one; you remaining always in the presence of the Lord find difference between great and small, therefore, you are not fit to remain here, you go down to the world of devils ( असुर–लोक ). By this curse, the two door-keepers had to go to the lower creation and had to take three births for learning that there are not fundamental spatial divisions in the whole universe. One of them became Hiranya-kashipu; his son Prahlad showed him that God exists equally in such material things as a pillar of stone; i. e. a stone is really not a stone from the devotional point of view. Present science also says that matter is energy when moved with the speed of light. Therefore, in all image worship in all temples in India, the structure of idols is always touched with the light of a lamp of organic substance (ghee). If the worshipper gives up attachment to the body-idea, the image also gives up its body idea.

There is no time and space apart from the sense of 'I' If I am the same as body, then it can be said that I am in time and space. But are we bodies ? Time and space are mental forms, coming into existance subjectively after the ego-sense. In sleep there is neither time nor space. When we awake, there sprouts up the ego, saying "I am the body". This physical sense creates time and space and locates therein the body and the world. But really we are neither the body nor the mind but the eternal "I am" which is unchangeable and which runs like a thread through the succession of thoughts. We should reject the varying thoughts that pass and isolate the pure "I am" which is the self. Then we shall find that, I is timeless and spaceless. Since time and space do not survive the ego, they are unreal. When we dream, both time and space newly arise and as our dream has a beginning, we ought, if we are seeing reality, to be able to know, then and there in the dream that dream time and dream-space had a beginning. But we are not able to do so. Only when we awake, we find that we were mistaken. There is no substantial difference between dream space and waking space in this respect.

Since space is an illusion, the distinction between inside and outside-without which the world cannot be an objective reality-also becomes unreal. Thus all the multitudinous limitations which have always appeared to pertain to us are shown to be illusory. Since there is no outside, there are not only no inanimate objects but also no separate living persons in that outside. We have seen already that many of the arguments for the world's reality took for granted the multiplicity of persons located in space. This idea is an out-growth of the ego sense. The "I" sense being limited to the body of the seer, he cannot help imagining that in everybody that he sees, there is a person. Thus, the notions of you and he arise, and these are ideas born of ignorance.

In this connection, the following story given in the Vishnu Puran deserves our attention. It will help the reader to a clearer understanding of this question. A sage named Ribhu imparted the secret of the self to his discipale Nidagha. After some time the disciple went to his native town. Then after some years, the sage went in search of the disciple and found him in his native town; but the disciple failed to recognise the sage. He took him for some rustic that may have come to his town for sight-seeing. Just then, a royal procession was going along the road, and the sage asked what it was; then the following dialogue took place between the master Ribhu and the disciple Nidagha:-

Nidagh replied :-The king of this place is going in procession.

Ribhu :-Who is the king ?

Nidagha :–The one who is seated on the elephant.

Ribhu :–Which is the elephant and which the king.

Nidagha :–The one that is above is the king and the one that is below is the elephant.

Ribhu :–I do not understand your meaning, please explain it more clearly.

The disciple wondered at the profound ignorance of the seeming rustic. To make him understand, he got upon the back of the sage Ribhu and said "Look here, I am above, like the king and you are below like an elephant."

Ribhu ;–If as you say you are above like a king, and I am below like an elephant, then make me understand what you mean by I and you. i. e. you have put 'I' above but I find that I is below. Then Nidagha jumped down and fell at Ribhu's feet and said "Surely you are my holy master Ribhu; for no one else has such an unfailing awareness of the profound truth of the non–duality." Ribhu told him that that was the teaching he needed and went away. Thus Nidagha was made to realise that the difference between one person and another person is unreal and that there is only one real self. Plurality of souls is an illusion, the offspring of ignorance—"I am the body." This ignorance is the sole root of all sense of spatial differences. The notions of above and below seemed to be true to the disciple in this story only because he identified himself with one body. The bodies were above and below, not the self. The self or spirit transcends all differences. The distinction of inside and outside is no more real than that of above and below, and without it there is no world. The root of all these difficulties is the initial error of taking it for granted that one single body is the self and all the rest not-self. Forms are created by the very act of observation when the eye attached to the form of the body sees other forms. The continuance of the dream depends on our believing it to be real. The same is the case with the waking condition.

The ancient revelations of the Indian philosophy tell us that the true self is not really a finite being, as the intellect makes him out to be. He is not restricted to a particular body, his body is the whole universe—the whole of creation. He is called Vaishvanara or Vishva—the all-man. The waking world is one indivisible whole, so that we should either take the whole as ourself, if we can, or renounce the whole as an illusion. The true waking is the ego-less state. Then, the self is all and the question of reforming the world does not arise.

Unhappiness is no other than the separation of the mind from the Universal self and happiness is just the return of the mind to its source. The mind is active when it separates from the spiritual self. But as space is an illusion, mind should unite with the spirit. To become aware of anything is to disconnect the mind from the self and that is unhappiness. Not to be aware of things or thoughts is happiness. For, then, we are the Absolute universal spiritual self. This condition is graphically explained in the Brihadaraniyak Upnishad (4–3–21) as follows :—

तद्यथा प्रियया स्त्रिया संपरिष्वक्तो न किंचन बाह्यं वेद, नान्तरं, एवमेवायं पुरुषः प्राज्ञेनात्मना संपरिष्वक्तो न किंचन बाह्यं वेद नान्तरम् ।

i. e. As one that is locked in embrace with his beloved wife knows not anything outside or inside, so a person who is locked in the embrace of the Real self knows not anything outside or inside.

The imposed snake and the rope are perfect negations of each other. They cannot be seen simultaneously. The rope is unrelated to the snake, it did not give birth to the snake. There is no spatial division between the two. So too, there is no spatial division between the Absolute spirit and the world and the two cannot be seen simultaneously. He that sees the world does not see the Absolute spirit. on the other hand, he that sees the Absolute spirit does not see the world.

There is no real relation between the two as time and space are unreal. The conception of the universe as a whole is fundamental to the true conception of reality but so long as we keep within the limitations of time and space by erroneous thinking, we cannot rise to the idea of the whole. Reality ceases to be reality when taken as piece-meal. Sufficient explanation has not been given to time and space in the Upnishads because they are unreal and create unnecessary difficulties. Knowledge is sometimes more disastrous than ignorance when it is not of the right sort. This is our experience in the dream state. It is the same in the waking state. It relates to the sphere of time and space. Pure consciousness is a higher reality. In the higher level, there are no divisions of time and space. There the new knowledge brings the conviction that "I am all", "I am the

Reality", it annuls all plurality and all distinctions, it carries its own proof and its own validity. Social activities derive their value from their necessity in the sphere of plurality. This is impossible in the undifferentiated oneness of the highest reality. The question what shall succeed our attainment of the Absolute state cannot logically arise, for succession and happening are possible only within the bounds of time-space and change and are unmeaning when these are transcended. Plurality of souls has relation only to the imperfect state, they are real as long as that state continues but no longer. When a man realises his Brahman-hood (spiritual state) he does not look upon himself as one object among other objects, He is the all. No relation can be established between Brahman and the world, just as no relation can be established between the dream tree and the waking tree.

There can be no space without अनुयोगी and प्रतियोगी i. e. without two opposite objects. Then, there is a question about their relation also. Relation does not exist without the related and the related does not exist without relation. Although they appear to be true in one condition, they are negated at once in another condition. They are at once negated because time is part of the relation. In the new science of relativity, the distance between two points is called an interval.

In the Adwaita-ratna-rakshana of Madhusudan Saraswati, section 11 is devoted to भेदस्वरूपनिरास i. e. denial of space or interval. The following is a brief argument given therein :-

किं स्वरूपं भेदेऽन्तर्भवति, स्वरूपेण वा भेदः । न प्रथमः स्वरूप व्यवहार लोप प्रसंगात् । द्वितीये तु भेदमात्रं वा स्वरूपेऽन्तर्भवति प्रतियोगि घटितं वा । न प्रथमः, भेद मात्रस्य प्रतीत्यनारूढत्वात् । तस्य च स्वरूपान्तर्भावेऽभिधीयमानेऽविवादात्, व्यावहारिकभेदस्य विचार्यमाणत्वात् । प्रतियोगि घटितश्चेत् स्वरूपेऽन्तर्भवति, तथा च पटाद्भेद इत्येवं रूपस्य तस्य घट स्वरूपे पटादभिन्नो घट इत्येवस्यात् । तथा च भेदाय धावता विपरीतं कृतं स्यादिति परिभावयाज्ञानम् । एवं घटात्पटभेदेऽपि द्रष्टव्यम् । तथा जगत्घटभेदेऽपि जगतो घटात्मता प्रतिपादिता स्यात् । × × × स्वरूपस्य भेदत्वे तस्यान्यसाकाङ्क्षतापत्तिः साचानिष्ठा, एकस्य वस्तुनो द्वैरूप्यासंभवात् ॥

i. e. The questions are :-

1. Whether a thing or substance is included in the space or

2. Whether the space is included in the thing.

The first alternative is not possible, because a thing which is itself divided will not be available for practical use. In the second idea, again there will be two alternatives as follows :-

1. Whether space only is included in the thing ? or
2. Whether space with the opposite object is included in the original thing ?

The first alternative is not possible, for two reasons, (1) space is not visible and (2) If it is included in the original thing, there would be no question of space. Here we are considering the question of space in practical life.

If space with the opposite object is included in the original thing, then a pot would be seen as not separate from a piece of cloth. Then, in trying to find difference, we find the opposite. The same situation will arise when a cloth is seen as not separate from a pot. And the same condition will arise when looking at the world which will be seen alongwith pot and all other things without any spatial division between them. If there is spatial division in the original thing, then something other is required. This is non-sense. One thing cannot be another thing at the same time.

In the Bhagwat Puran ( in canto 10, chapter 13 ) there is a story that when Lord Krishna was moving in the forest with cows and cow-herds, ब्रह्मा the creator wanted to see the माया

measure of the Lord Krishna, therefore, while Shri Krishna was dining with his friends, ( the cow-herds ) ब्रह्मा the creator took away all the cows, and when Lord Krishna went to search for the cows, ब्रह्मा the creator took away all the cowherds. Lord Krishna came to know the trick of the creator. Then he assumed a new measure माया by which he himself took the forms of so many cows and so many boys and also created, space between them. One year passed in this way. Then the creator found his own mistake, returned all the cows and boys that he had taken away and began to pray as follows:–

" The whole universe is equal to the length of only seven palms of your hand, and in every hair of your body, there are infinite worlds ( 10-14-11 ); you, as Narayan appear to be lying on a bed of sea but as a matter of fact, it is due to a particular kind of measure माया that it appears to be so. If your cosmic body was really in water, why did I not see you, when I peeped through the lotus-stick, but on the contrary found you in my heart.

तस्मादिदं जगदशेषमसत्स्वरूपं
स्वाप्नाभमस्त धिषणं पुरु दुःख दुःखम् ।

त्वय्येय नित्य सुख बोध तनावनन्ते
मायात उद्यदपि यत्सदिवाव भाति ॥ 10-14-22.

i. e. all this universe is non-entity like things seen in a dream, it is inert and miserable, it is visible by assuming a particular measure and appears to be true because you are the eternal divine substance of all things.

आत्मनेवात्मतयाविजानतां तेनैव जातं निखिलं प्रपंचितम् ।
ज्ञानेन भूयोऽपि च तत्प्रलीयते रज्जवामहे भोग भवाभवो यथा ॥
10-14-25.

i. e. When a man does not know his real self (which is all pervading) he is able to see the universe. But when he gets right knowledge, the universe cannot be seen. Just as when there is ignorance of the rope, a serpent is seen and the serpent vanishes when the rope is recognised. This means, in other words, that when the self or an observer assumes a body and considers himself as being at one place (instead of being everywhere), spatial divisions will be felt. As in dream, so in the waking condition. This means that space is derivative. It does not come in existence unless the functions of the co-ordinates are known, If I drop a pencil from my hand, it falls on the ground but during that small interval, the earth has moved round the sun, so that if anyone who is away from the earth sees that event he will see the pencil as having moved to a longer distance in a curved space.

The question of space has also been fully discussed in Vedant Siddhant Muktavali from pages 111 to 120 (with Hindi transalation) published by Achyut Granthmala, Benares, but the language used there is unsuitable for translation in English. The language used there is full of negative terms, where-as English and practical language require positive terms. The nature of time-space measure is given in positive terms in the new science of Relativity. In the Indian philosophy it is stated that space begins when the qualities of one thing are not in another thing. In the new science, space begins when some spatial observation begins.

One interesting question is answered at several places in the Bhagwat. The question is whether God may be knowing all the events of the Universe. In order to know them, there must be some space pre-existing and finite. This means also that God must be finite. It is said in stanza 2-6-35 of the Bhagwat that just as space (आकाश) does not know its boundary, God does not know the end of his Maya or measure. According to the new science, also, space does not begin before the observation begins. As in dream, so in the waking condition. We may ask every person in our dream how the universe seen by all (there and then) has come to exist, but no one can give us a satisfactory answer. But if we wake up, the answer is clear and the answer is found at once. Before God creates some space, he must create some time, because it takes some time in proceeding from one point to another point. Before creating time there must be some events and before events, there must be some events and some time. Before and after have no meaning unless a system is specified. As I have explained the nature of time in my previous books, I do not take up this subject here for explanation. It is said in shri Bhagwat that the whole visible universe is super-imposed on the one Absolute spirit ब्रह्म. Spiritual experience ब्रह्म दर्शन can be had in the following way :-

यत्रेमे सदसद्रूपे प्रतिषिद्धे स्व संविदा ।
अविद्ययात्मनि कृते इति तद्ब्रह्मदर्शनम् ॥
1-3-33 ( Bhagwat ).

i. e. in the condition in which both the physical and the psychological aspects of God ( which are created by ignorance ) are negated, the One Absolute spirit is realised i. e. all relations will have to be negated for obtaining true spiritual experience.

# CHAPTER 10

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## Unity and Multiplicity.

There are two schools of thought in India which maintain that if time and space are seen in the effect they must exist in the cause also. These are called :

(1) Dwaiti ( भेदवादी )

(1) Dwaitadwaiti ( भेदाभेदवादी )

The first school maintains that Brahman ( ब्रह्म ) is the efficient cause ( निमित्त कारण ) only and not the substantive cause ( उपादान कारण ), in as much as there is absolute and eternal difference between the Lord and this world of reals. This is called the Madhva school and is prevalent mostly in southern India.

The second school believes that time and space are also spiritual and exist for the play of the Lord, therefore, we must see unity in difference. This line of thinking is followed mostly in the Chaitanya religion of Bengal, in the Nimbarka school and in Shri Aurobindo's Yoga of self-perfection. Shri Aurobindo believed that God is not bound by unity or by multiplicity but he has not explained how time and space exist in God.

All the above Schools find great difficulty in explainig the meaning of the Mahavakyas like तत्त्वमसि thou art that and like वाचारम्भणं विकारो नामधेयं which give the possibility of the knowledge of all by the knowledge of the One Spirit.

The pure adwaitins follow the monistic doctrine. They consider that time and space are relative and cannot exist in the Absolute. The Upnishadic passage Tat twamasi तत्त्वमसि and Badarayana Sutra Tat tu Samanvayat तत्तु समन्वयात् are the two main pillars which support their doctrine. The philosophy of three states viz. waking, dream and sound sleep given in the Mandukya Upnishad is also very helpful for the monistic doctrine and for showing the unreality of time and space. The Upnishads do not declare that the qualities found in God are to be regarded as eternal. The entire plurality of appearance is not denied by the Absolutists who only emphasise the phenomenal nature ( empirical reality) of the multiform world. The absolutist interpretation of the Upnishads satisfactorily provides scope for the Sagun ( with attributes ) passages. If the Absolute position of the Upnihsads be not accepted, the nirguna passages,

( without attributes ) given in the Upnishads become utterly meaningless. Even by the farthest stretch of imagination, Nirgun passages cannot possibly be conceived to refer to personal deity or his numerous manifestations According to the monistic view, Ultimate unity never clashes with apparent multiplicity and hence a full and and satisfactory explanation of all Upnishadic passages is possible from the Adwait stand-point alone.

The world is full of merits and demerits. The merits may be asserted as true to justify the Saguna nature of the Brahman. But why should the faults be also posited as true. Even the sturdiest champion of the Dwaita position would hesitate to admit Brahman ब्रह्म to be tainted with faults. Adwaitins hold that the reality of the world is not absolute. The world has no independent existence of its own. It is only a synonym for falsity. Falsity of the world, and reality of the Brahman do not clash with each other as both of them are not situated at the same place, like the appearance of snake in a rope. This means that when unity is realised, multiplicity must necessarity be untrue.

In the Nyaya-Vaisheshik Realism and the

Sankhya-Yoga dualism, time and space are fundamental. Therefore, these systems are only useful for the beginners. In the monism of Vedant, time and space are transcended. Therfore, this system is only useful for the strong and pure minded ( Uttamadhikari ). When time and space are negated or transcended, the world appears to be false. This falsity is explained in the Vedant system in the following ways :

1. The world is something quite distinct from both existence and non-existence.

2. The absolute non-existence of thing ( in the paramarthika or in its own form ) in a locus where it appears.

3. The capability of being sublated by knowledge.

4. The appearance of a thing in a locus where it never exists in the parmarthika or in its own form.

5. Something other than the object of valid knowledge.

The first definition means that a thing is capable of being apprehended as existent but at the same time, it has non-possession of ultimate existence. Space also has a similar character. It is capable of being apprehended as existent but at the same time it has non-possession of ultimate existence. As in dream, so in the waking condition. The same argument which applies to the existence of the world applies to the space also. Space is neither real nor unreal. If real, the cognition would be valid, if unreal, no actvity will be induced, if both real and unreal, then two contardictory qualities will subsist in one and the same entity. Its nature is really undefinable, or anirvachya. Modern physical science also says that space is finite though unbounded. This is something like the anirvachya Maya of the Vedant philosophy. The criterion of determining an erroneous knowledge depends upon the subsequent sublation of the object ( or space ) of the knowledge in question. The falsity of the worldly objects is established by their very nature since they are not objects of universal cognition. The same is the case with space. Space is not the same for two obserers and therefore is not an object of universal cognition. Space is due to a particular kind of measure which is capable of being negated by subsequent knowledge. As is the case of the shell–silver or rope–snake, so is the case with space and time.

Measures (or प्रमितत्व) are of three kinds viz.

1. Apparent measure (i. e. pratibhasika-pramitatva). This means that illusory objects like shell-silver and the space between the subject and object do become objects of valid knowledge before the true nature of their underlying entities is known. So, there is a measure although it is temporary.

2. The second kind of measure is an empirical measure (व्यवहारिक प्रमितत्व.) This is made common by mutual relations or (in the scientific language) by gravitation. In this measure space is of a more enduring nature than the former kind; the former is liable to sublation even an instant after its appearance; but the latter kind of measure is difficult to be transcended in the worldly stage, as all the practical relations cannot be negated. Yet, in sound sleep, the practical measure disappears for that period.

3. There is a third kind of measure (प्रमितत्व), the final or ultimate one. It belongs to Brahman, the Absolute. It is not liable to sublation. Here all spaces and all times are transcended. After the realisation of this ultimate substration, the worldly phenomena does not continue to be the object of valid knowledge; therefore, space does not form part of valid knowledge. The ultimate knowledge of the Absolute is called पारमार्थिक

प्रमितत्त्व. The world and the worldly-space are not the objects of ultimately uncontradicted knowledge. Then, we reach the stage of pure existence which is the absence of negation in any circumstance. (साध्यत्व अभावरूप). The quality of absence (अभाव) is not present in Brahman the Absolute, and as such it cannot be termed as false. It is the one-without-a-second.

Some dualist thinkers argue that if space is false, it is equal to its absence in its own locus. This is not true. The absence of space in its own locus is by itself no criterion to make it a pure non-entity. The shell-silver and the space created in the perception are not entirely non-entities. Absolute non-entities are like hare's horn or a son of a barren woman.

There is no space in Brahman the Absolute because it has no correlate (प्रतियोगी). It does not possess any objective existence but is of the nature of being, knowledge and bliss (सत्-चित्-आनंद).

Another question may arise that if space is negated in its own locus and everywhere else in the final spiritual experience, where does the principle of negation remain? If the negation is negated, the original space becomes fundamental. If negation is not negated, it creates dualism, and some fundamental space is required to maintain that dualism. The reply is that the negation of the negation of the thing or (space) imparts reality to the thing (or space) first negated only in those cases where the determinats of negation are different with reference to both the negation and its counter-entity. In the case of the silver, the determinant is silveriness, while that of not silver is not-silveriness. These two determinants (अवच्छेदक) being different, the negation of silver would establish the existence of silver and the space. But where the determinant of negation with reference to the negation and its possitive correlate are identical, the reality of the opposite (प्रतियोगी) cannot be established by the negation of its negation. If we negate the existence of an elephant in a dream and the space in the dream, that negation in the dream does not establish the reality of the elephant and the space. In the waking condition, similarly, the negation of the absolute negation of a jar and space does not establish the existence of the jar itself. In the case of the world and the space and their negation, the determinant is the same phenomenality (प्रपंचत्व). Hence, the negation of the negation of the world and space can never establish the reality of the world-appearance and space. The knowledge of the negation of spatial divisions (नानात्व) is the realisation of the Supreme. This supreme realisation negates the world-appearance, the world-space and also ngates that negation in one operation. The principle of non-contradiction (अबाध) is the test of truth. Knowledge which is not contradicted is truth. Dream states with the space therein are contradicted by waking experiences and waking experiences with the space therein are contradicted by dream experiences, and also by insight into reality (ब्रह्मानुभव). This is the highest knowledge, since there is no other knowledge that can contradict it.

The empirical reality of the worldly objects and the space between them are not contradictory to the Adwaita conception of falsity. The world and the space may be called existent only so long as they are perceived to exist; but they are at the same time false in as much as they are liable to future sublation by supreme Realisation. Present appearance of the world and space are, therefore, not contradictory to future sublation. Brahman has been expressly declared in the Shruti as the One which can never be subject to sublation in any circumstances. But no such declaration is found in the Shruti with regard to the world order. The whole world of not-self is false and consequently has no independent existence of its own apart from that of the self. The final stage of knowledge is called Vedant, (i, e. वेदस्य अन्त) which means unconditional absolute knowledge. It is spontaneous and self-revealing. Where there is space, some interval is necessary. Space appears when there is some kind of otherness इदंता. As there is no otherness in the Absolute Brahman, question of space does not arise in that condition.

Spatial differences are due to a particular kind of maya or measure. When shri Krishna was playing in the field with cowherds, once the cow-herds created a play in which some became thieves. At that time one devil took the form of etherial space, he became a thief and stole away several cow-herds and their cattles. He kept them in a cavern of a mountain and covered it with a large stone. When Shri Krishna found out his trick, he killed that devil and rescued his devotees ( Bhagwat 10-37-33 ). Here that devil was in the form of a spatial division. Spatial division begins to exist when men enter into false political divisions like the governors and the governed. Therefore, in the Indian society, political men are given a second place, the first placce being given to sages or men of wisdom ब्राह्मणत्व i. e. those that recognise no spatial divisions.

Therefore, space is a relation, a kind of measure or Maya. This is quite in agreement with the modern science but Indian philosophy defines the relation in the following three different ways according to the view-point adopted:-

1. आध्यासिक संबंध-a relation which contains an illusory space.

2. समवाय संबंध i. e. a relation which exists side by side with the observer.

संयोग संबंध i. e. a relation in which space exists independently of the observer.

The first space being illusory misleads the observer as to genuine information about the external universe. For instance, when we see a serpent in a rope, the object is illusory, and the space between the observer and the serpent is also illusory. Dream illustration is more suitable. Vedant philosophy adopts the view that space is illusory. In the west, this view has attracted most idealists from Plato to Mac Taggart, but Indian philosophy helps us very much in this respect. The second kind of space is regarded as a form or pattern subjectively imposed upon experience by ourselves. Here space is derived from the measure continuously remaining with the observer. In the west, this view is held by Kant and his followers.

The third space is genuine space itself existing independently of ourselves or even of the events through which we discover space. This view is held by the Nyaya and Vaisheshic schools of philosophy. In the west, this view has found support from the Newtonian Absolute space.

A fourth view has recently been possible about space by the discovery of the science of relativity. Time–space is a relationship between events and has no objective existence outside those events. As events are not independent of an observer, knowledge of the physical world is not independent of an observer's experience. The difference between Kant and the science of relativity is that Kant takes space as an a–priori element just as the संयोग संबंध of the Indian philosophy. In the latter view point, space is derivative and is a relationship between events. As it is possible to prove that events are illusory, the first idea of space given in the Vedant philosophy i. e. आध्यासिक संबंध is the only correct one.

# APPENDIX

## Development of the idea of Space in Modern Physics.

Modern physics gives us a good deal of truth about the nature of space, therefore, all philosophers should try to study it. Once a meeting was held in Benares, consisting of the Pandits of that place. In was presided over by Sampurnanand, the present educational minister of the U. P. Government. In his concluding speech, he advised the pandits of Benares to try to understand modern science of Relativity. He said, there is no difference now between philosophy ( दर्शन ) and science ( विज्ञान ), as the new physical science has become very subjective. The following is a brief outline of the new development in the physical science. The former science used to tell us why things happen; modern science tells us how things happen. To describe the phenomena quantitatively, two great theoretical systems were developed between 1900 and 1927. One was the quantum theory, dealing with the fundamental units of matter and energy. The other was Relativity, dealing with space, time, and the structure of the universe as a whole. Both are now accepted as pillars of modern physical thought. Einstein's theory of relativity emphasized that time and space, far from being absolutes, are concepts that depended upon a set of special conditions which were hardly universal. Accordingly, position and motion are meaningless terms unless related to a particular frame of reference. The quantum theory developed by two German physicists Heisenberg and Born showed a new mathematical apparatus that permitted accurate description of quantum phenomena either in terms of waves or in terms of particles as one wished. Quantum physics also demolished causality and determinism. By dealing in terms of statistics and probabilities, it has abandoned all idea that nature exhibits an inexorable sequence of cause and effect.

Before the discovery of the theory of relativity, the scientists thought that space was some kind of substance. If light consisted of waves, there must be some medium to support them. This medium they called ether which they decided must pervade all space and matter. Then two American scientists reasoned that if all space was simply a motionless sea of ether, the earth's motion through the ether should be detectable and measurable in the same way that sailors measure the velocity of a ship through the sea. Then a suitable instrument was constructed, and light beams were passed in opposite directions. After several experiments, no difference was found in the velocity of light. In 1905 Einstein published a short paper, which opened a new conception of the physical world. He began by rejecting the ether theory and with it the whole idea of space as a fixed system or fame-work, absolutely at rest. He reasoned that if the velocity of light is constant regardless of the earth's motion, it must be constant regardless of the motion of sun, moon, star, meteor or other systems moving anywhere in the universe. From this, he asserted that the laws of nature are the same for all uniformly moving systems. Nature offers no absolute standards of comparison; and space is simply relation of things among themselves. Without things occupying it, a space, space is nothing. In the Indian philosophy also, unless there is अनुयोगी and प्रतियोगी there is no spatial division. Alongwith absolute space, Einstein discarded the concept of absolute time i. e. unvarying universal time streaming from the infinite past to the infinite future. Therefore, sense of time and sense of space are like the sense of colour i. e. a form of perception. Just as there is no such thing as colour without an eye to discern it, so an instant or an hour or a day is nothing without an event to mark it. And just as space is simply a possible order of material objects, so time is simply a possible order of events. If something drops from my hand on the earth, it may appear to be a straight line fall. But the earth rotates about the polar axis and also revolves about the sun. To some one outside the earth, the same article would seem to move in a very complicated path. Hence the article apparantly moves in a straight line only relative to me on the earth. Einstein gave a proposition that "The future course of optical phenomena may be predicted from the conditions of the experiment relative to the laboratory in which it is carried out, without knowing the velocity of the laboratory in the universe." From this proposition, it was deduced that with moving clocks, different durations of time will be obtained for the same physical event. The duration of time taken for light to travel from the source (S) to a mirror (M) and back to (S) depends on whether the interval is measured by a clock at rest in the fundamental system (F) or by one in the laboratory (L) moving with velocity (V) with respect to. F. Thus duration of an event

i. e. interval (or व्यवधान in the Indian philosophy) has to be qualified as "duration relative to a specific frame of reference." By this Einstein means "duration measured with the aid of a clock firmly attached to the frame of reference." This principle applies also to space and space measurements. If an investigation similar to the one on the duration of time as measured by clocks is carried out "for intervals in space," as measured by measuring-rods, the length of a yard stick, is also affected by its motion. As the moving measuring rods change their lengths relative to resting rods, one should speak only of "length relative to a specific system" and not of "universal length" as such. An observer in Bombay may receive simultaneously radio signals from two points at equal distances from Bombay. He would say that they were sent out at one and the same time but an interceptor on a moving train receiving the same signals would not receive them simultaneously if they are sent out according to conventional clocks. Therefore, the word simultaneous should be introduced only in the combination "simultaneous relative to a frame of reference." Some one can rightly ask a question "what has this system of reference to do with the Indian philosophy!" If this system of reference is to be applied to the Indian philosophy, we should take into consideration the laws of the waking system, the laws of the dream system and the laws of sound sleep. In that case, the objective validity of science will be useful also for these subjective experiences. The dream is not a dream at the time of dreaming. At that time it is something like a gravitational field or an inertial frame. But it is so relative that the observations of the waking state destroys the dream completely and the observations of the dream state destroys the waking state completely. In physics, the body to which events are spatially referred is called a co-ordinate system. A co-ordinate system which is admitted in mechanics is called an inertial system. In the theory of relativity, the doctrine of space and time or kinematics, no longer figures as fundamental independent of the rest of physics. The geometrical behavior of bodies and motion of clocks rather depend on gravitational fields which in their turn are produced by matter.

It is difficult for an earth-bound man to accept the idea that this very instant which he calls now or that this very place which he calls here cannot apply to the Universe as a whole. If a man is walking on the deck of a ship at the rate of 3 kilometres an hour and if the ship moves through the sea at the rate of 12 kilometres an hour, then the man's velocity with respect to the sea is 15 kilometres an hour. There is no such thing as space interval independent of the state of motion of the system of reference. The measurement of time and distance are variable quantities. In 1951, Einstein developed his General theory of relativity and made the following statement:- "The laws of nature are the same for all systems regardless of the state of motion. In other words, it is not possible to distinguish by means of mechanical experiments carried out in a laboratory the accelerations that arise from inertial forces. Eintein called this "the principle of equivalence of gravitational and inertial forces". He also said that the laws of geometry in a space where there exists a gravitational field are different from those in a space which is "of free forces" in the old sense. Not only the paths of material bodies but also those of light rays in a gravitation field can be described simply in terms of geodesic lines in this curved space, and conversely, that the curvature of space can be inferred from observations on the path of moving bodies and light rays. This is the reason why (when we awake from our dream) the waking observations destroy the dream curvature of space completely. The new curvature of space of the waking condition is determined by the distribution of matter which produces the gravitation field of the waking state. It appears that in the dream state, there was a new kind of curvature of space. If a man in Bombay sees Calcutta in his dream, the space between the two is curved. If it is not curved, the man will wake up in Calcutta. Similarly, waking condition is destroyed by means of new observations created in the dream state. When the general theory of relativity was published, the 'Times' paper of London said "Observational science has in fact led back to the purest subjective idealism". Before Einstein, it was believed that if all material things disappeared out of the universe, time and space would be left. According to the relativity theory, however, time and space disappear together with the things". We cannot keep dream time and dream space if the dream materials disappear and we cannot keep the waking time and waking space if the waking materials disappear in dream or at the time of death or when we pass in a spiritual state.

Since the geometrical structure of a gravitational field is shaped by the mass and velocity of the gravitating body, star, moon or planet, it follows that the geometrical structure of the universe as a whole must be shaped by the sum of its material contents. For each concentration of matter in the universe, there is a corresponding distortion of the space–time continuum. Each celetial body, each galaxy creates local irregularities in space–time. Philosophers and scientists have arrived at the startling conclusion that the whole objective universe of matter and energy, atoms and stars, does not exist except as a construction of the consciousness, and edifice of conventional symbols shaped by the sense of man. Einstein carried this train of logic to its ultimate limits by showing that even space and time are forms of intution which can no more be divorced from consciousness than can our concepts of colour, shape or size. Space as "seen" by the modern physicist has no objective reality except as an order or arrangement of objects we perceive in it and time has no independent existence apart from the order of events by which we measure it. The problem of gravitation is reduced to a mathematical problem. We are required to find the simplest fundamental equations which are co-variant in relation to any transformation of co-ordinates whatever.

In the sub-atomic phenomena, Heisenberg discovered in 1927, basic laws in terms of intensity and frequency of radiation. This implies a radical break with mechanistic physics, which used position and velocity of particles as the basic concepts occurring in the fundamental laws of matter. This means that if the initial position and momentum of a particle of very small mass (a sub atomic particle) are known withing a certain margin, the position at a future instant can be computed within a certain limit. This means that "position" and "momentum" are two different aspects of a small mass (i. e. an electron) in much the same way that the particle properties and wave properties are two aspects of the photon. To say that a particle is located in a certain limited region of space is exactly analogous to the statement that light energy is concentrated in a photon, and to define the momentum of a particle is analogus to the emphasis on the wave aspect of light. Both material particles and light have the dual characteristics of particles and waves, but their behaviour is neither contradictory nor haphazard. If we apply this simile to the nature of an individual human being as described in the Indian philosophy, the individual is a particle when he is attached to the body idea and is a spiritual wave when he is detached from the body idea and the phenomena differs in proportion to the intensity or frequency of this idea. Thus we obtain a good corrolary between the findings of the latest science and the principles of the Indian philosophy. A man lives where his thinking places him. This is similar to the principle of indetermancy discovered by Heisenberg. The two types of properties are "complementery" features of the same physical object. What we observe depends on what observable reaction of our life we bring to test. This means that science and philosophy cannot discover what happens in the world, but can only describe and combine the results of different observations. This is called दृष्टि-सृष्टिवाद in the Indian philosophy. The new science teaches us the connection between different descriptions of one and the same reality i. e. God is seen and tasted from different points of view. The constancy of the velocity of light of spirit and of physical light is true only under very specific conditions viz. when strong gravitation fields are not present. When a devotee cries for God's help ( as in the Gopi–geet of Shri Bhagwat ) a strong gravitation field is created and then God's light cannot remain uniform or constant. This is also experienced by a man in his dream condition. This is also experienced in the shooting process in cinema. In physics, Einstein was the first to recognise the impossibility of a mechanical explanation of optical phenomena and therefore got rid of ether or space. If a man wants some space to live in after death, he must limit his idea of spirit or God. This habit leads to patriotism of a limited country and to racial prejudices. The space of ether thus created is not a fact of nature or spirit but is a relation. Bodies move in paths that are represented by the shortest possible paths. If a man wants immediate happiness, he can get it through sensual pleasures. If he wants spiritual happiness, he must pass through uncurved space which he can create by meditation.

The achievement of the relativity theory for religion is simply that it provides a place for mind in nature, which during the period of mechanistic physics was regarded as completely "material and mindless". If the curvature of space or in other words, the gravitational field is known, then one also knows how a body that is present in this space will move. This explains how different beings may be living in different worlds or lokas (लोक) as described in the Indian philosophy. If we speak about the existence of a system without relating it to a thinking being, it is an obscure mode of expression. If we do connect it with a thinking being, we imagine more or less vaguely a being with some intellectual capacities.

In 1935, an improvement was suggested in the theory of relativity and therefore in the interpretation of space, by Prof. Milne of the Oxford College. The leading idea in his work is not that of transformations of co-ordinates (प्रमाण and प्रमेय) but from observer (प्रमाता) to equivalent observer where the world equivalent will be strictly defined in terms of observations and tests which the observers can actually carry out. This means प्रमाता in other condition. We may here substitute an observer of the dream condition but physics has nothing to do with dream. Therefore, they take into consideration waking observer in other condition. The standpoint adopted as regards space in this new kinematic Relativity of Milne, is that the space used for the description of phemomena is essentially arbitrary, and at the disposal of the observer. The phrase "physical space" has no meaning. The formation of laws of nature, the description of phenomena in terms of co-ordinates will be different according to the space selected. This means that the coincidents of events which are called measures are always made at the observer himself. They are events which occur at the observer. The simplest such observation is the reading of a clock at the moment the event occurs. This is in principle simply the assigning of a number-sequence or a number-continuum to events which occur in the observer's own experience.

The principle of relativity (**माया** or measure) only arises when we consider the experiences of a second observer. If there be only one observer in the world, there would be no relativity. This is very helpful to the Indian philosophy which says that there is no maya where there is the experience of the Absolute Brahma only. In the kinematic Relativity, space is constructed out of time measures. Length co-ordinates, distance co-ordinates are simply certain combinations of time-measures. All we know are our observations of nature, fundamentally related to and expressed in terms of our temporal experiences. This is called **दृष्टि-सृष्टिवाद** in the Indian philosophy. It is even called **एक जीववाद** which is fully and clearly explained in वेदान्त सिद्धान्त मुक्तावली.

In the new theory of kinematic relativity, there is nothing objective about the speed of light. The constancy of the speed of light is a consequence of conventions. The constancy of the velocity of light as fixed in Einstein's theory is a weak point in Einstein's theory. In the new theory of Milne, numerical measures of lengths or distances are obtained by clock-readings only. It does not assume uniform relative vilocity. The interval of time between two events in different places, in the experiences of a given observer, is the difference between their time co-ordinates as measured by observations with the clock of the observer concerned. In this system, each uniformly moving particle-observer of the system sees himself for all time at the centre of the system, and sees the system arranged non-homogenously but with spherical symmetry round bimself. This happens in a man's dream condition. In the waking condition, he thinks more of others than about himself and, therefore, he cannot overcome his maya or measure. Though the system always occupies, in the experience of any member of it, a finite volume, this volume of particles has "no velocity through space." This system possesses a centre of position in the experience of each particle occuring, coinciding with itself and is 'at rest' as a whole relative to this particle.

It is equally at rest relative to other particles. Every observer has his own space-frame but no meaning can be assigned to asking what is the space-frame common to different observers. This conclusion agrees with the Indian philosophy of yoga-vasistha but the science of relativity proves it by mathematics.

This means that creation is not a creation in absolute time, for no such statement has a meaning. It is only a creation in each observer's time; and no two observers, in any cross section of events, assign the same 'time ago' to the event of creation. The universe, though describable in the time and space of an observer is neither in space nor in time; to assert either would be meaningless. There is no fundamental entity called 'space' existing in itself, in which the world is placed nor is there any fundamental stream of 'time' in which the world is created. Out of an observer's temporal experiences, observed time is constructed and out of the same time-measures, observer's space. But there is no underlying time or space with which these can conceivably be correlated. This means that a man is the God of his own universe and he can keep it as long as he wants to observe it. As in dream, so in the waking condition.

The consequeuces of the theory of relativity for theory of knowledge were not fully realised, until Milne give a new turn in 1935 by means of his kinematic relativity. For example, if a star is at a distance whence light takes years to come, while it takes minutes to come from the sun, a sequence of changes affecting both ebodies may appear to one person to have been completed in the sun before it begins in the star but to an observer on any planet which might be associated with a star, the contrary might be true. Relativity is thus essentially a problem in the theory of knowledge as well as in physics. This means that the decision of one observer is as valid as that of another. The traditional relativity dealt with distant events and therefore the importance of temporal and spatial experience at the observer was obscured. The whole development of Milne's work has been to empasise that there can be no unique measure of time and therefore no unique measure of space.

To measure a length we have to say what we mean by two points at the same time, and thus in principle, we require a definition of distance simultancity. To measure a time we have only to say what we mean by two events at the same place viz. in our individual consciousness. All the writings concerning time and space by Russel, Whitehead, Broad as well as by the psychologists were prior to Milne's reconstruction of physical foundations on a basis of the temporal experience of equivalent and communicating observers; they had only the use of relativity at the stage reached by Einstein. Therefore, all the previous conclusions require to be reconsidered. Milne's researches have brought physics very near to the results of the Indian philosophy. This means that the new physicists are accepting such reality of time and space as would be superceded in another forms of experience. This is quite in accordance with the Mayavada of the Indian philhsophy. Mayavada is a symbolic representation which requires to be transcended Mayavada is affirmed only to be later negated; it is the same with Milne's theory of kinematic relativity. The last word in in Indian philosophy is not Mayavad but Ajatvad. Maya is a faculty for perversion or अध्यास only, not the faculty for revealing the truth. There is no time-space outside ignorance or अध्यास. As the whole of time is the product of ignorance, a dream within it, it would be wrong to assert that ignorance itself begins at a particular moment of time. We cannot infer the nature of reality from the nature of the appearance that we subjectively and erroneously superimpose upon it. There can be no real connection between them, much less any correspondence. Both in thought and feeling, to realise the unimportance of time and space is the gate of wisdom. Time and space denote a relationship between events and have no objective existence outside those events.

Even if knowledge becomes communicable, it does not prove that the world that we see has real existence. In the India phiiosophy, we find a familiar example of seeing a snake in a rope. If ten persons see a serpent in a rope and they communicate their knowledge to one-another that all of them saw the same serpent, it does not prove that what they saw had real existence. In Milne's mechanics uniform velocity is defined in terms of the equivalence between one observer's temporal experience and that of a second and responding observer. This gives rise to the possibility of observers communicating and correlating their knowledge. But this does not prove that what they see is absolutely true. Milne's observers are not disembodied observers, and the frame of reference does not belong to a disembodied spirit. The descriptions of individual example of motion will be simpler or more complicated according to the frames of reference chosen but the description of the laws of nature can be put in a form independent of the particular frame of reference chosen and the same for all possible frames of reference. The contents of the universe will have a different description according to the frame of reference used. The individual observer's awareness of something he calls the passage of time is sufficient to provide measures of length and distance. The distances travelled by the particles from their original positions will be proportional to their velocities. In other words, radius or space is relative. In Milne's theory, the means of perception is light but he assumes no empirical properties of light and space. The system appears to create the space it needs as it expands. As in dream, so in the waking condition. Space is not a physcial attribute of the universe but is a mode of description of phenomena which is at the disposal of the observer. The regraduation of clocks affects all length measures and so all space-coordinates as well as time co-ordinates. In the Yoga Vasistha, in the following three examples wonders of the time and space are clearly noticable :—

1, In the example of Gadhi Brahman's dip in the water.

2. Lila's three husbands.

3. King Lavan's imaginary journey to an imaginary country.

In Milne's theory of kinematic relativity, it was made possible by the regraduation of clocks to bring gravitational and electro-magnatic phenomena under a single scheme. Perhaps Einstein got some new hints from it, worked on it and gave to the world a new generalised theory of gravitation in December 1950. Gravitation field and electro-magnetic field are now viewed as being two manifestation of one united cosmic unity. Some one asked Bertrand Russel as who in his opinion was the greatest man in our world during the last 50 years? He replied "I choose Einstein first".

A system and its space do not come in existence until an observer is present and then the observer and his space are made by the measure of the system and the system is made by the measure used by the observer. The emphasis has now shifted from the individual to the operation of experiment and observation. It is stated in Shri Bhagwat that:—

जन्म त्वात्मतय पुंसः सर्वभावेन भूरिद ।
विषय स्वीकृतिं प्राहुर्यथा स्वप्नमनोरथः ॥ 11-22-39

i. e. to accept the body, the senses and the objects as real is really the birth of man, there is no other brith. As in dream and as in day-dream, so in the waking condition.

Any individual that we may contemplate as living in the world in the ordinary sense is no longer an independant existence, whose nature demands or determines it but is rather a logical construct formed and shaped and modified so as to afford a true picture of the relations which his observations exhibit. Distance and remoteness which create disitegration are not equal for all individuals. We cannot neglect an interaction between the thing to be measured and the instrument of measurement and the observer. The study of measure forms an integral part of any integral education.

When I see some body as separate from me, I have to place myself at one position. This condition is unspiritual. Spirit or soul cannot confine itself at one place. A spiritual observer sees himself at all places and at all times and therefore secures eternity of existence and becomes all-pervading. This is the true goal of all human life.

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# Reviews of Books of Swami Madhavtirtha

## Wonders of the Time-space. (page 321).

Einsteins theory of Relativity is as fascinating a subject as it is difficult to understand fully. It is oftern said that the number of people in the world who have thoroughly grasped this theory in all its implications is so small as to be easily computed on one's finger-tips. Swami Madhavtirtha is obviously, one among them; for in his " Wonders of the time-space, an attempt is made to apply the principles of the Relativity theory to psychology and philosophy. This naturally leads to the Vivarta (illusion) and Ajatvada theories of Vedant. The book discusses the diverse aspects of the Relativity concept from the religious, physical and psychical points of view. In his concluding remarks, the author very ably discusses some of the philosophical precipitates of this theory and points out that ths essence of a good life lies in concentrating on the realisation of the Supreme Eternal spirit. Swami Madhavtirth has really done a good piece of work in discussing the metaphysical implications of the Theory of Relativity in the light both of modern science and Indian philosophy.

In this task of his, the Swami has brought to bear the results of his long study and comprehensive understanding of Indian philosophy and the book will prove of great interest to readers in search of a work co-ordinating physics with philosophy ( Bharat-jyoti. Bombay weekly, of 24-12-50 ).

2.

You are to be congratulated, no doubt for your success as a modern :scientific interpreter of our ancient अजातवाद of the Vedant philosophy.

( Swami Tapovanji of Utter kashi 5-1-51 )

3.

The holy swami has made it clear that the great Modern discovery is not something quite unknown to mankind upto this time but is only a discovery through a scientific and mathematical intellect of what was previously known by intuition and supported by the logical reason.

( The Divine life 1-6-51 )

4.

Swami Madhavtirth's study of the Einstein theory of Relativity as applied to philosophy and psychology extends to the last three decades and the result of his research and exploration is embodied in a brief and concise exposition of the Time-space. The ideas of time and space have baffled many a thinker and several attempts have been since made to render these ideas accessible to the general reader. The illusion and reality of these ideas are divided only by their partitions and in the course of a dialogue between Lila and Goddess in Yoga Vasistha one gets a faint glimpse of reality.

(The Hindustan times, New Delhi, 7-1-51).

5.

The book is a notable contribution to Indian metahysical thought and to human knowledge.

(Federated India, April 1951)

6.

We have an eminently readable book which makes a genuine effort to bring a difficult subject to the comprehension of general reader by examples and illustrations. This, in itself, is a piece of welcome service.

We welcome all efforts to approach ancient truths from new standpoints.

(Pilgrim – Madras).

7.

The exposition is free from technicalities and quite intelligible. To the task of applying these scientific doctrines to the field of philosophy, the auther brings acute logic and ripe experience.

(Hindu 31-12-50).

8.

Here is an answer to the common, although complicated and mysterious questions of the present science. The Swamiji has written this book after his 30 years of research on the subject and really this will satisfy those who want right thinking and right observation.

( Leader 11–2–51 ).

9.

The book is a highly valuable one from the points of view of psychology and philosophy. The learned author has discussed the theory of time and space in a new and novel manner. It is a higly instructive and useful book, particulerly for those who want to understand the fundamentals of time and space with a scientific approach of the present day. (Indian states)

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## MAYA

*( few copies left )* ( pages 130 )

Your spiritual exposition of relativity doctrine shows the fruits of many years you have devoted to the study and meditation upon the subject. Undoubtedbly, it is through such channels, as a realisation of the philosophical implications of relativity that science is being forced to give up materialism. Here there is a great hope for the future ". ( Paul Brunton ).

2.

You have made the first original contribution in India in combining the theory of Relativity with the Indian doctrine of "Maya".

(A. S.)

3.

In "Maya" Swami Madhavtirtha finds a convincing explanation of the riddle of time–space and he elaborates explanation with characteristic perspectivity in a small book.

(Hindustan Times 7–1–51)

4.

This book is an attempt at reconciling Einstein's theory of Relativity with Vedant philosophy. The author is familiar with both the systems and what he says is clear, cogent and deserving of attention. The whole work is a good exposition of Prof. Einstein's findings in the hight of the Vedanta philosophy. Yet its objectivity and absence of bias make it all the more readable. It is complete in itself and does not presuppose the knowledge of the theory of Relativity. People will derive great pleasure and benefit from its study (Prabudha Bharat, April 1950).

5.

The subjects dealt with are space, time, motion, causation and philosophical observations. The book is a thought–provoking exposition of science and philosophy combined and as such deserves wide study amongst their students.

(Hindustan Review, Patna).

## Evolution and Relativity

I am very much pleased to read your small book "Evolution and Relativity;" you argue, just like Gandapada who is considered to be the great interpreter of अजातवाद (the doctrine of non-creation). But all his arguments depend upon mere श्रुति (scriptures) and अनुमान (inferences). You argue strongly standing upon the rock of modern science. That is the difference. Therefore, I think your arguments will be more appreciated by the modern educated men".

Swami Tapovanji of Utter Kashi
( Himalays )

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## The concept of time in Indian philosophy

( pages 88 ).

This book turns the first sod in the field of " time " and is welcome for the systematic attempt made to gather all that Indian philosophy has to say about time, and that seems to be precious little.

Swami Madhavtirtha is the solitary figure in the field of philosophy in India who has been impressed with the possibilities of relativism and has been attempting to apply it to Indian philosophy. We hope his example will be followed by other scholars.

+ + + +

This is a stimulating book and Swami Madhavtirtha has the courage to face new and difficult problems which others pass by. As perhaps the only serious book on the subject, we have no doubt, it will be welcomed by the Indian and Western thinkers and by Christians who are challenged by the statement in Rev. 10–56 "I saw the angel sware that there should be time no longer".

( Pilgrim–Madras )

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**Higher Culture** ( pages 172 )

The improving of scientific or secular education in progressive countries does not bring about a proportional growth of their culture. A higher standard of life, on the other hand, makes for stronger desires. Western education draws the pupils, attention only to their physical well–being, for, morals cannot be taught where teacher and student are lacking in the spiritual back–ground. Education, however, must be for the full life and not merely for livelihood. Pedagogical systems that do not aim at teaching self–control are imperfect: According to the author of the book, the caste system was originally based on the graded capacity for self–control in individuals and communities. Misdirection of love and sympathly is at the back of most of the failures of modern society. The author maintains that religion can cure these failures. ( Hindustan review )

## The author's books can be had at the following places :-

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1. Bombay-N. M. Thakar & Co, Book-Sellers, 140, Princess Street.
2. Madras-Messrs Higginbothams & Co. Book Sellers, Mount Road.
3. Poona-Oriental Book House, 330 A Sadashiv Peth.
4. Banares-Indian Book Depot, ( Theosophical Society ) Kamacha.
5. Surat-Sastu Aushadhalaya, Opposite Baroda Bank, Chauta Bridge.
6. Ahmedabad-Mahadev Ramchandra Jaguste, Three Gates.
7. Bhavnagar-Nagarik Bhandar, Near Barton Library.
8. Baroda-Pustakalya Sahayak Sahakari Mandal, Raopura.
9. Rajkot-Mohanlal Dossabhai, Book Seller Para Bazar.
10. Valad-Vedant Ashram, Station Medra, ( Ahmedabad-Prantij Rly. )

The determinism of physical laws simply reflects the determinism of the method of inference i. e. individual measure or Maya

Appearance of many human beings is also a phase of an event in any one observer's observation. A man who is in a dream cannot ask others in his dream to vote for him after he wakes up. Similarly, a man who is in a waking state cannot ask others in his waking state to vote for him after he goes in his dream state, or after he acquires a spiritual state. This means that space between one man and another man is indetermined and loses its boundary in another state.

As time and space are not common in the waking state, creation is individual. Space increases when the individual makes disintegrative observaitons and stops when he obtains integral vision. This book will help the reader to acquire integral vision.

# By the same author.

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